

Demonstrating Faith in the South

No greater demonstration of faith in the South, and in its future, can be found than the investments by national business concerns in this section during recent months. Every day announcements are made of new projects of great variety and magnitude, projects proposed and being established at various points in the South by local interests and outside capital. Revival of construction activity in this region first became noticeable some six or eight weeks ago, and in the past few weeks the aggregate amount of new building has been growing. At a time of general business dullness throughout the United States, the interest of the great industrial leaders in the South offers additional encouraging proof of its advantages for manufacturing and, in so far as new projects have been undertaken in the Southern states, this section is thus carrying out the suggestions of the Hoover conferences to promote construction activity.

During April, a total of \$441,000,000 represented the amount of new construction proposed and let to contract in the South, for 137 major enterprises only. This expansion program emphasized such projects as a \$2,000,000 contract for an addition to the great ammonia plant of the Atmospheric Nitrogen Corporation in Virginia; \$10,000,000 initial development for a kraft paper mill in Florida by the International Paper Company, and a \$9,000,000 program of the Tennessee Coal, Iron and Railroad Company for a further diversification of output.

Electric power expansion is being supplemented by a natural gas development, which is serving and is expected to serve many additional communities and industries outside the gas-producing regions of the South. The 1,000-mile pipe line project from Louisiana gas fields to Chicago in the Central West is estimated to involve an expenditure of more than a hundred million dollars.

The foregoing merely illustrates some of the larger industrial activities as announced through our Daily Construction Bulletin; a more detailed list is published elsewhere in this issue. Such a volume of development will draw upon the manufacturing resources of the South and the country at large for materials, machinery, equipment and supplies of almost every conceivable nature.

While other sections and individual concerns have been discussing and analyzing the business situation, the South has been welcoming new developments by industrial leaders who have had the vision to realize the possibilities of the South as a profitable field for investment and manufacturing. Southern people, awake to their opportunity, are endeavoring to provide public improvements, and the power companies and railroads and other upbuilders of the South are looking ahead and preparing the way for enlarged business activity.



WOULD YOU ALLOW WATER to LEAK into



the WORKS
of your
WATCH

Imagine what would happen to electrical power in Georgia if water leaked through the roof into the works of this Tugalo Power Station. But it won't. It's roofed with Cementile—as are other power stations of the Georgia Railway & Power Company.

Machinery and equipment in your industrial buildings, far more valuable than the works of your watch, certainly deserve efficient roof protection . . . complete, dependable, permanent.

Cementile are pre-cast, steel reinforced slabs of concrete—sure proof against destructive forces of weather, fire, fumes, and moisture. Repairs and other maintenance are reduced to a minimum with Cementile—the safest, most lasting, and therefore the most economical shelter you can place on your building.

Invite our engineers to suggest the type of Cementile roof which will best suit your needs. And, let us send you an illustrated book on Cementile roofs.

AMERICAN CEMENT TILE MANUFACTURING COMPANY

804 Oliver Building, Pittsburgh, Pa.

CEMENTILE

Plants: WAMPUM, PA.

Offices: PITTTBURGH NEW YORK

LINCOLN, N. J.
PHILADELPHIA

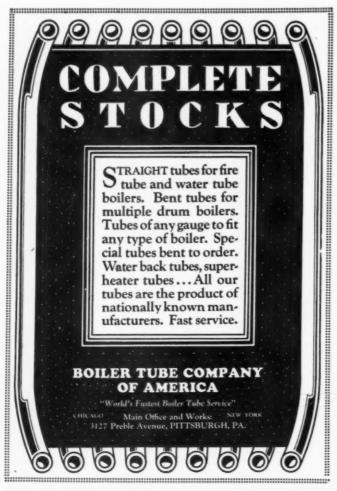
BIRMINGHAM, ALA. ATLANTA

BIRMINGHAM

Entered as second-class matter at the Postoffice, Baltimore, Md., under the act of March 3, 1879.



RYERSON





CONTINENTAL GIN COMPANY

announces many new improvements in Cotton Ginning Machinery and Heavy Duty Oil Engines.

Write for Details

Address: 4600 4th Ave. So., Birmingham, Ala.

BRICK—CHIMNEYS—CONCRETE
BOILER BRICKWORK
The Rust Engineering Co.

Engineers and Contractors
BIRMINGHAM, ALA.

PITTSBURGH-WASHINGTON-NEW YORK-CHICAGO

BOILERS
SAW MILLS
S Largest Works of the Kind in the South A A Castings C T HO LL L L L L L AUGUSTA, GA.

Reinfercing Bars—Structural, Bar and Sheet Steel R Parts and Repairs Belting—Packing Y TANKS

STACKS

CHARLESTON DRY DOCK & MACHINE CO.

Successors to VALE & MURDOCH CO.

MARINE AND STATIONARY BOILERS
Repairs to Steel and Wooden Vessels

8,000-ton Dry Dock-1,500 and 600-ton Marine Railways CHARLESTON, S. C.



High Temperature Cements

FIREBOND



THERMOLITH

REFRACTORIES
lay High-Alumina Silica Chron

Magnesite

Acid-Proof Brick
HARBISON-WALKER REFRACTORIES CO.
Warld's Largest Producer of Refractories
Pittsburgh, Pa.



ESTABLISHED 1868

THE BABCOCK & WILCOX COMPANY

85 LIBERTY STREET, NEW YORK

Manufacturers of

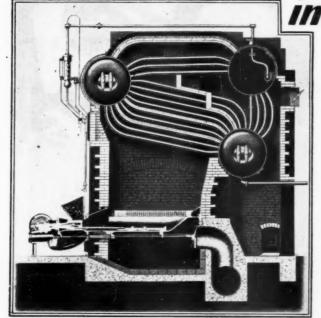
Water-Tube Boilers, Steam Superheaters, Air Preheaters, Economizers, Chain Grate Stokers, Oil Burners and Refractories. Pressure Vessels and Special Process Equipment.

BRANCH OFFICES

ATLANTA, Candler Building BOSTON, 80 Federal Street CHICAGO, Marquette Building CINCINNATI, Traction Building CLEVELAND, GUARDING Building DALLAS, TEXAS, Magnolia Building DANYER, 444 Seventeenth Street DETROIT, Ford Building
HOUSTON, TEXAS, Electric Building
Los Angeles, Central Building
New Orleans, 344 Camp Street
PHILADELPHIA, Packard Building
PHOENIX, ARIZ., Heard Building
PITTSBURGE, Koppers Building

PORTLAND, ORE., Failing Building
SALT LAKE CITY, Kearns Building
SAN FRANCISCO, Sheldon Building
SEATTLE, Smith Tower
HOWOLULU, T. H., Castle & Cooke
Building
HAVANA, CUBA, Calle de Aguiar 104
SAN JUAN, PORTO RICO, Recinto Sur 51

For Maximum Capacity in Minimum floor space and Head room



The Vogt Class M Low Type Water Tube Boiler requires less space than horizontal return tubular types. It is available in sizes from 80 to 430 h. p. and can be shipped assembled in the smaller units. It is much more economical than fire tube boilers for both heating and power.

Write for Bulletin giving setting dimensions and other data





Tested.... to Assure Better Welding

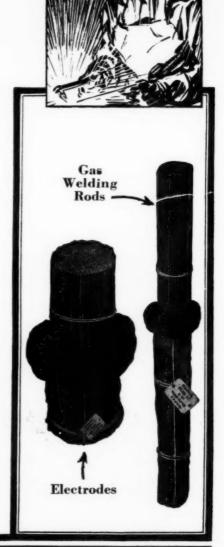
THE best way to be certain of the welding wire you buy—to assure highest quality and low shop costs—is to specify a brand that has a proved record back of it.

Premier Welding Wire, made only by the American Steel & Wire Company, has clearly demonstrated its superiority under the most severe of service conditions. Constantly uniform in its structure, always free flowing and deeply penetrating, it is free from harmful impurities and provides a weld of maximum strength.

Each bundle, gas or electric, is tested to insure its general efficiency. As a result spoiled work is eliminated and valuable time saved.

Today—write us about your welding problems. You will not be obligated.

PREMIER TESTED WIRES



AMERICAN STEEL & WIRE COMPANY

208 S. La Salle St., Chicago

SUBSIDIARY A LIMITED STATES STEEL TOURPORATION

30 Church St., New York

Honolulu

Other Sales Offices: Atlanta Denver Detroit Philadelphia

Baltimore Kansas City Pittsburgh Birmingham Memphis Salt Lake City

Boston Milwaukee St. Louis

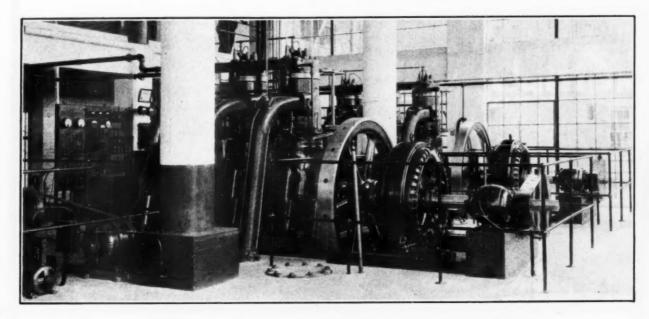
Minneapolis-St. Paul Wilkes-Barre and Seattle

Cincinnati

Cleveland Dallas Oklahoma City Worcester

U. S. Steel Products Co.: San Francisco Los Angeles Portland Seattle

Export Distributors: United States Steel Products Co., 30 Church St., New York City



"...therefore our power plant COST US NOTHING!"

In summing up a two-year cost report on their two 180 hp. Fairbanks-Morse Diesel-generating units, Hobart Brothers at Troy, Ohio, say "... therefore our power plant cost us nothing!"

Using cheap, low-grade fuel oil—and getting a far greater return in usable energy than any other form of power known to modern engineering—these engines in the Hobart Plant actually have paid for themselves out of savings and will increase profits for years to come.

So certain are the economies of Diesel power that America's largest manufacturer of these engines, Fairbanks, Morse and Company, offers a plan whereby the difference between your present power costs and the lower cost of Diesel generated power, actually becomes the payments on the engines.

Savings as great as 50% are not uncommon in the record of nearly 2,000,000 horsepower of F-M Diesels now in service. No wonder they pay for themselves in a surprisingly short time.

Fairbanks-Morse engineers are available for a survey of the power needs and costs in your plant. They will then show you from your own records the important savings which can be made. Cutting costs and not profits is the real answer to competition. Don't overlook

the major item of power. Write today, saying you are willing to learn the facts.

FAIRBANKS, MORSE & CO.

900 S. Wabash Ave., Chicago 32 branches at your service throughout the United States

This booklet explains in detail the unique Savings Payment Plan whereby F-M Diesels actually pay for themselves. A copy will be sent to executives on request.



begins the
SECOND CENTURY
of building
FAIRRANES SCALES

Some Advantages of Diesel Power

Low fuel cost Low maintenance cost Small operating force Maximum dependability Long, useful life Instantly ready to deliver full power No stand-by losses Simplicity in plant design Small floor space Simplicity in operation No service or demand charges Uniformly high efficiency in all sizes of engines Plant can be enlarged without sacrifice of original investment or overall economy.

Large water supply unnecessary

No chimney, smoke, ashes No coal or ash handling apparatus

FAIRBANKS-MORSE DIESEL ENGINES



POWER, PUMPING AND WEIGHING EQUIPMENT



S ealed ball bearings need greasing only once a year!

A few minutes—once in twelve months! That's all the time it takes to grease a Fairbanks-Morse Type Q Induction Motor. The bearings—ball bearings—are sealed in cartridge-type shells that keep lubrication in and foreign matter out. Bearings are kept clean always, as the rotor may be removed without exposing them to dust or corrosive gases.

Sealed, self-aligning bearing construction is an important factor in promoting the reliability and economy for which F-M Motors are so well known. As wear is almost

negligible, motor life is greatly increased, and danger of shutdowns due to bearing failure is virtually eliminated. The efficiencies and power factors remain practically constant during years of service due to negligible bearing wear and absolutely no shaft wear.

Sealed bearings are only one of many construction refinements that are making it possible for Fairbanks-Morse Type Q Motors to cut motor costs on thousands of installations. Get the whole story! We'll mail it gladly on request. Or, if you prefer, an F-M engineer will explain how Type Q Motors will help you cut power costs. There's no obligation.

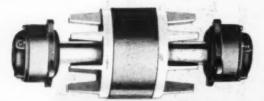
FAIRBANKS, MORSE & CO.

900 S. Wabash Ave., Chicago

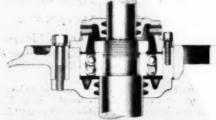
32 branches at your service throughout the United States



1930
begins the
SECOND CENTURY
of building
EAIRBANKS SCALES



OA40.48 Complete rotor showing the sturdy shaft and large, completely sealed ball bearings.



Self-aligning, double-row ball bearings mounted in sealed shell which excludes dust and dirt.



FAIRBANKS-MORSE MOTORS

POWER, PUMPING AND WEIGHING EQUIPMENT



Out of the Twilight Zone* ... into the safety zone

Twilight . . . the half-light which lulls to a sense of false security . . . can wreck the most vigilant safety program. For the dusk of the twilight zone is deceiving. It is neither darkness, warning to extra cau-



tion, nor lightin sufficient quantity to expose existing dangers.

Get out of the twilight zone conditions found in 87% of American factories. Get into the safety zone where plenty of light, properly placed and properly distributed, banishes danger and



On MAZDA Avenue

In the Westinghouse Lighting Institute actual installations scientifically demonstrate every type of modern lighting—

Open to visitors

Daily 9 to 5 — Saturday 9 to 12
7th Floor, Grand Central Palace,
New York City

—around the corner from your hotel

the haunting fear of accident.

Westinghouse works with industrial engineers in their efforts to make lighting a profitable part of their production facilities. Westinghouse lighting specialists can show you how to use lighting to better advantage.

The way out of the Twilight Zane

For those interested in using light effectively, an interesting illustrated booklet, "The Way Out of the Twilight Zone," is available. Write for a copy to the Westinghouse Lamp Company, Dept. 203, 150 Broadway, New York, N. Y.

*The deceptive half-light midway between obvious darkness and adequate illumination.

Westinghouse Lighting Specialists will help you plan an effective lighting system

Westinghouse

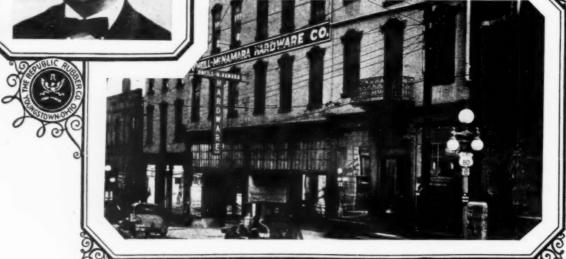




TALK NUMBER FIVE BY A PROMINENT DISTRIBUTOR



"We Procure Maximum Quality and Minimum Prices



Above—Mr. C. J. O'Neill, President of the O'Neill-McNamara Hardware Company of Vicksburg, Mississippi. This company's services are of a definite economic value to the prosperity of its business territory.

ANUFACTURERS approach us knowing they are in competition with others who desire the volume we have. They realize that to earn our volume they must offer a maximum of quality at minimum prices. This price advantage we bring to consumers. Our recommendations are worthy of thought, and we recommend Republic's Belting—Hose—Packing—Molded and Lathe Cut Goods."

The above statement is characteristic of those made by prominent distributors all over the country. It explains in part how the Industrial Supply Distributor, helping to solve the important problem of broad markets and economical distribution, upholds high quality, maintains fair prices and saves needless efforts on the part of both consumer and manufacturer.



Whether it be for sand suckers—loading or unloading oil, or, molasses, or, such work as contractors must do every day, Republic's Suction Hose will meet every requirement economically.

Send For Sample.

THE

REPUBLIC RUBBER CO.

Youngstown Ohio



REPUBLIC means the Best Mechanical Rubber Goods

FOR 5 years this Northwest has been handling pipe for Allen & Reed, Inc., of Providence, R. I. This concern handles 300 cars of pipe a year, 35 tons to the car. Before the installation of the Northwest it cost them \$35.00 a car. The Northwest has reduced this to \$12.00 a car making an annual saving of \$6900.00

The Northwest goes anywhere; it is not confined to tracks but will work at the sides of the cars or up the aisles between the piled material. When it is through with one job it can go to another anywhere around the plant. It will handle coal, ashes or cinders for the power plant, scrap from the shop, sand for the foundry and material for the store yard.

Yard flexibility pays—let us make a survey of your plant

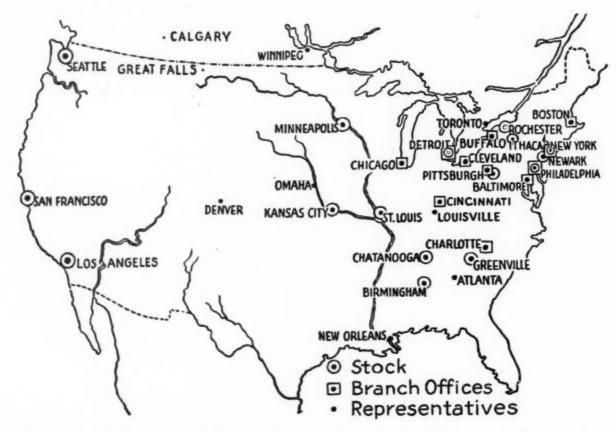
NORTHWEST ENGINEERING COMPANY

The world's largest exclusive builders of gasoline, oil burning and electric powered shovels, cranes and draglines

1733 Steger Bldg. 28 E. Jackson Blvd. Chicago, Ill., U. S. A.

NORTHWE

Morse Power Transmission Service Is Nation Wide—



Morse Engineering Service and Supply Offices are located at strategic centers to insure prompt service to our customers at all times. Complete stocks of standard drives, flexible couplings and parts are available at these points.

Competent engineers located at these points will gladly care for your needs efficiently

and promptly. They are well trained to give you definite, practical, money saving information about power drives, flexible couplings and speed reducers. Call in a Morse Engineer. He will gladly consult with you about your power transmission problems. Mail the coupon for the Morse Stock Bulletin No. 35.

MORSE CHAIN CO., Ithaca, New York

Engineering and Sales Offices-

ATLANTA, GA., (Earl	F. Scott & Co.)	702 Candler Bldg
	(Moore-Hundley Hdwe. Co.)	
	960	
	CAN., (Strong-Scott Mig. Co.	
CHARLOTTE, N. C.	404 C	ommercial Bank Bldg

NameBusiness			
DRNINGSS			
Address		-	 -
City	State		 _

CHATTANOOGA, TENN., (James Supply Co.) ,	. 1104 Market St
CHICAGO, ILL	112 W. Adams St
CINCINNATI, OHIO	622 Broadway
CLEVELAND, OHIO	421 Engineers Bldg
DENVER, COLORADO, (R. M. Parsons)	Box 232
	7601 Central Ave
DETROIT, MICH.	Contract Ave.
GREAT FALLS, MONTANA	Strong-Scott Mig. Co.
GREENVILLE, S. C., (Carolina Supply Co.)	. 35 W. Court St
KANSAS CITY, MO., (Crago Gear & Mach. Works)	. 1416 Walnut St.
LOS ANGELES, CAL., (J. W. Minder Co.)	927 Santa Fe Ave.
LOUISVILLE, KY., (E. D. Morton Co.)	. 516 W. Main St.
MINNEAPOLIS, MINN., (Strong-Scott Mig. Co.)	. 413 S. Third St.
NEWARK, N. J., (Dodge-Newark Supply Co.)	. 281 Market St.
NEW ORLEANS, LA., (A. M. Lockett Co.) Q	
	50 Church St
OMAHA, NEB., (D. H. Braymer Equipment Co.) .	
PHILADELPHIA, PA.	
DITTERUDGH DA	
PITTSBURGH, PA.	westinghouse bidg.
PITTSBURGH, PA., (Tranter Mfg. Co.)	
ROCHESTER, N. Y., (John M. Forster Co.)	
SEATTLE, WASH., (Star Machinery Co.)	1731 First Ave., So.
ST. LOUIS, MO., (Bates Sales Co.)	. 1025 N. 6th St.
SAN FRANCISCO, CALIF., (Adam-Hill Co.)	244 9th St.
SAN FRANCISCO, CALIF., (Adam-Hill Co.) TORONTO, ONT., CANADA (Strong-Scott Mig. Co.)	. 50 Front St., E.
WINNIPEG, MAN., CANADA (Strong-Scott Mig. Co.	772 Dufferin Ave.
manufacture (Deliver) Deliver in the Co.	merin rave

The Davison Chemical Company

Manufacturers and Distributors of

All Grades of

SULPHURIC ACID **SUPERPHOSPHATE** DOUBLE SUPERPHOSPHATE

Main Plant, Baltimore: Pyrites Deposits Clenfuegos District, Cuba; Phosphate Rock Plant, Southern Phosphate Corporation, Bartow, Florida.

Fertilizer Plants: Maryland 11: Virginia 9; Pennsylvania 10: Georgia 2; Ohio 2; North Carolina 11; South Carolina, Mississippi, Louisiana, Texas, Indiana, West Virginia, Tennessee, Connecticut and New Jersey 1 each.

Main Office: Baltimore Trust Building, Baltimore

Goldens' Foundry & Machine Co.

COLUMBUS, GEORGIA

MANUFACTURERS OF

MACHINE MOULDED PULLEYS SHAFTING HANGERS

Couplings, Pillow Blocks, Floor Stands, Collars, etc.

Send for Price List and Discount Sheet

WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies, Rayon Manufacturing Plants, Textile Finishing Estab-lishments, Raw Water Ice Plants, Laundries, Etc.

ROBERTS FILTER MANUFACTURING COMPANY

604 Columbia Avenue

Darby, Pennsylvania

DECALSO

Water Minus All Hardness

insures even dyeing; smooth running threads; reduction in thread and needle breaks in knitting.

AMERICAN WATER SOFTENER COMPANY S. E. Cor. 4th and Lehigh Ave. PHILADELPHIA

Softened

For every industrial and domestic use Filters-Pressure and Gravity

Softeners—All types

WM. B. SCAIFE & SONS CO. Executive Offices, OAKMONT, PA.





Cut Spur, Bevel, Fierra and Worm Gears



Harnischfeger Corporatio Established 1884 ne and Heist Divisies

Ball Bearing Punch



Ball Bearing and Roller Bearing Punches

Capacity, %" thru %" iron; Weight complete, 87 lbs.

in many styles and

Capacity 3"x3"x¼'
Angle Iron;
Weight, 154 lbs.

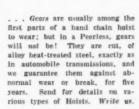
No. 62 Angle Iron

Shear

Write for Catalog and Price List on Entire Line

WHITNEY METAL TOOL COMPA'NY ROCKFORD, ILL.

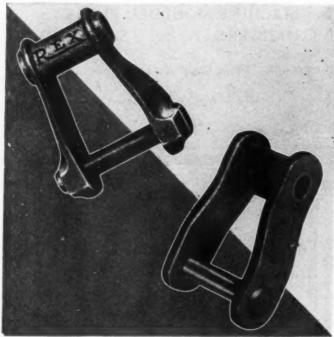
What Part Will Wear?





THE HARRINGTON COMPANY **PHILADELPHIA**

For Every Industry



A complete line of chains and auxiliary equipment for

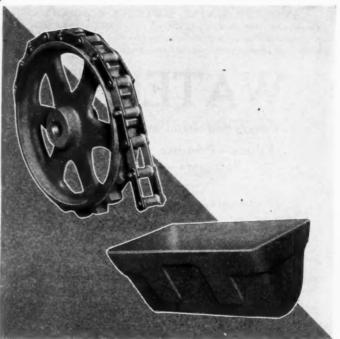
Lumber Mills Fertilizer Plants Machinery Manufacturers Oil Well Drilling Port and Warehouse Systems Sugar Mills Sand and Gravel Plants **Phosphate Mines**

and, complete elevating, conveying and handling systems for Power Plants, Foundries, Pulp and Paper Mills, Rubber Plants, Canning Plants and many others.

There's a Chain Belt Distributor near you. Write or phone him for full information.

SOUTHERN DISTRIBUTORS

Henry Walke Company	Norfolk, Va.
Teague Hardware Co.	Montgomery, Ala.
McGowin Lyons Hdw. & Supply Company	Mobile, Ala.
Young & Vann Supply Co.	Birmingham, Ala.
C. T. Patterson Company	New Orleans, La.
Hollis & Company	Little Rock, Ark.
Reed & Duecker Co	Memphis, Tenn.
Lufkin Foundry & Machine Co.	Lufkin, Tex.
E. D. Morton Co., Inc.	Louisville, Ky.
Georgia Supply Co	Jacksonville, Fla.
Harry P. Leu, Inc	Orlando, Fla.
Bailey Lebby Co.	Charleston, S. C.
Georgia Supply Co.	Savannah, Ga.
J. M. Tull Rubber & Supply Company	Atlanta, Ga.
Empire Machinery & Supply Co.	Norfolk, Va.
Nixon Hasselle Company	Chattanooga, Tenn.
Briggs Weaver Machinery Co.	Dallas, Texas
Corbin Supply Co.	



CHAIN BELT COMPA



BUCKETS SPROCKETS CONVEYOR

SYSTEMS

735 PARK STREET, MILWAUKEE, WIS.

THE STEARNS CONVEYOR COMPANY East 200th St. and St. Clair Ave., CLEVELAND, OHIO [Division of Chain Belt Company]

BRANCHES

ATLANTA BIRMINGHAM CINCINNATI HOUSTON

and 14 other cities

CONCRETE MIXERS

PAVERS TRANSMISSION PLASTER MIXERS ELEVATORS PUMPS CONVEYORS

SAW RIGS

CHAIN SPROCKETS TRAVELING WATER SCREENS



There are perhaps no sweeter profits than those derived from savings within your own production costs. And yet many manufacturers continue to overlook one of the greatest sources of this type of profit-modern lubrication!

EVERY time a machine goes out of commission, due to mechanical failure, profits take a tumble.

Machine repairs are expensive. Machine parts aren't on the free list by any means. Idle employees pay no dividends. "Time out" in production is money out of pocket for you.

Alemite High Pressure Lubrication Sys-tems are saving 80% of breakdowns in the plants where they are employed. For breakdowns are mostly due to bearing failures which, in turn, are mostly due

to improper lubrication protection.

It is not the desire or purpose of Alemite Corporation to browbeat or bully American industry into this simple and readily proved method of protection against loss. Rather is it our desire to call to your attention the fact that Alemite Systems will save their own costs and pay dividends thereon up to 200% the first year they are installed.

You will, of course, wish to prove this to your own satisfaction before going into extensive installation. To this end we provide Cost Sheets for your use in checking one machine or a group in comparison with others in parallel service. See what Alemite saves in the first instance as against the old-time methods in the second.

Such a test will be all you need to know—all the "argument" necessary.

Alemite Corporation (Division of Stewart-Warner), 2686 N. Crawford Avenue, Chicago, Illinois.

Lubrication with Alemite, is brought within reach, re-gardless of the size of the machine, or the number of remote bearings on it. Lu-bricant is forced, under thousands of

ALEMITE CORPORATION (Division of Stewart-Warner)

& dimidt

2680 N. Crawford Ave., Chicago, Ill. We would like to have a set of cost sheets for Alemite comparative test.

Address

City.....State.....

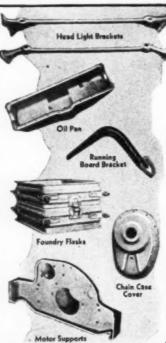


HEAVY PRESSED STEEL SECTIONS

in Large Quantities to the Most Exact Specifications

For the production of mediumandheavypressed steel sections, Truscon offers you an unusual service. All processes from initial design to complete assembly are under one supervision and responsibility, assuring prompt delivery. The greater accuracy and economy obtained through unit production result in better pressed steel products and lower costs.

Manufacturers are urged to let Truscon Engineers cooperate with them in developing their products. Write for quotations on your pressed steel needs.



MATERIAL HANDLING EQUIPMENT for Speed in Production

Truscon furnishes a complete line of Steel Boxes, Skid Platforms and Six-Wheel Factory Trucks to facilitate and economize handling operations. They are adapted to the specific requirements of various industries. Full information will be sent on request.

TRUSCON STEEL COMPANY PRESSED STEEL DIVISION 6100 Truscon Ave. Cleveland, O.

Steel Boxes

4-Way Platforms

VE WITH PRESSED STEEL

FIFTY YEARS

Experience in the designing and manufacturing of

MATERIAL HANDLING EQUIPMENT

puts us in a position to supply equipment of proven worth at the lowest possible price.

Call on us for

Apron Conveyors Belt Conveyors

Chain Conveyors

Gravity Roll Conveyors

Spiral Conveyors

Bucket Elevators

Elevator Buckets

Skip Hoists

Car Pullers

Sheet Metal and Structural Steel Work

THE WEBSTER & WELLER MFG. COMPANIES
1820-1856 N. Kostner Ave.
CHICAGO, ILL.

Offices in the principal cities



Clark 3-Ton "Truclift." Platform 281/2" x 54"; min. ht. 11:/4"; max, ht. 16"; speed 1 to 6 mi. per hour.

Clark "Truclift"



Picks up its load—carries it rapidly from here to yonder. Eliminates costly manual labor. Quickly pays for itself and then starts swelling dividends. Gas powered, competent for 24 hours continuous service—just as potent the last hour as the first. An inquiry will bring details of the cost-cutting performance of this equipment in industry.

The Clark Tructractor Co.

Attach this
ADVERTISEMENT
to your inquiry

Battle Creek, Mich.



Manson Friction Tape

Ask any Howell user

Howell Electric Motors Company

KONITE PRODUCTS ulated Wires and Cables ished Cambrid

lating Tape

OKONITE

INSULATION

is identified theSingle

Friction Tape is probably more subject to adulteration than any other item of electrical equipment. Electricians want a sticky tape. To make it sticky it must be doped in a manner that reduces its adhesiveness and thereby lowers its protective value.

Manson Friction Tape is made of a very strong cotton fabric into which is callendered by heavy pressure a rubber compound containing only new Up-River Fine Para rubber. It is not a "sticky" tape but sticks readily enough and is permanently adhesive, will not dry out and will not peel. It is the finest friction tape made, and is recommended for purposes where permanence is essential.

Send for a copy of "Splices and Tapes."

It contains authoritative information about this subject.

THE OKONITE COMPANY

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, INC.

Factories: Passaic, N. J. Paterson, N. J.

SALES OFFICES:

NEW YORK CHICAGO PITTSBURGH ST. LOUIS
BOSTON ATLANTA SAN FRANCISCO BIRMINGHAM LOS ANGELES SEATTLE DALLAS





The ultimate friction is felt by a comet hurtling through space. Something greater than space. Something greater than white heat is developed, and the wear and tear is intense.

To this friction of flying mat-

ter against atmosphere, Service Casters must bow. But to this only! For they rise superior to the friction of ordinary wear and tear at high speeds in in-door hauling. Timken, Service and Hyatt bearings, skillfully placed, absorb the wear of mov-ing contacts — lengthen caster life—save floors—and minimize handling costs. Send the coupon for detailed description.



SERVICE CASTER & TRUCK CO., 527 N. Albion St., Albion, Mich.

Factory Representatives In Principal Cities

Service Casters & Trucks

SERVICE Casters & Trucks

Yes, Service, Please— Tell us about the speedy lasting quinterest is in ☐ Caster replacement Service."	ualities of Service Casters. Our
Name	
Company	
Address	City & State MR-5-8-30

CONTRACT MACHINE WORK

Parts and Complete Machines Heat Treating and Grinding Mail Blue Prints for Quotations

GENERAL MACHINE WORKS YORK, PA.

GENERAL

Industrial Machine Work-Heavy and Medium Builders of Special Machinery Brick Yard Supplies

FERNHOLTZ MACHINERY CO. Boyle Ave. and Missouri Pacific Railroad St. Louis, Mo.

PATTERNS

We make delivery promptly on your pattern work, under guaranteed quotations. Express Prepaid

A. W. HAAS PATTERN CO. Atlanta, Ga. 1791/2 Garnett St. S. W.

GALVANIZING—Hot Process

Cadmium Plating a Specialty GALVANIZED PRODUCTS FURNISHED

BIRMINGHAM GALVANIZING CO. Birmingham, Ala.

GALVANIZING HOT DIPPED . PROCESS .

The largest job galvanizing plant in the United States GALVANIZED PRODUCTS FURNISHED

JOSEPH P. CATTIE & BROTHERS PHILADELPHIA, PA.

Patterson

Estab. 1858

TACKLE BLOCKS

There is a Patterson-built block for every job. Write for Catalog No. 22

W. W. Patterson Co. 57 Water St., Pittsburgh, Pa.



COMPLETE FOUNDRY SERVICE

The MOCCASIN BUSHING COMPANY, manufacturers of MOCCASIN OIL DISTRIBUTING BUSH-INGS, is prepared to supply engine brasses, brass or bronze castings of all descriptions and MOCCASIN solid or cored bronze bars at reasonable prices.

Send your specifications to the MOCCASIN BUSHING COMPANY, 2000 Chestnut Street, Chattanooga, Tennessee. Your order will receive our prompt attention.

WE MAKE A SPECIALTY OF

HIGH GRADE GREY IRON AND **SEMI-STEEL CASTINGS**

All Kinds of Machine Work. Special Machines Made to Order.
Prices Will Suit You. Prompt Service.

Salem Foundry & Machine Works

Salem, Va.

We make a specialty of

HIGH GRADE GREY IRON, BRONZE AND MONEL METAL CASTINGS.

MACHINE PARTS—SPECIAL MACHINERY.
HYDRAULIC WHEEL PRESSES.

GREY IRON CASTINGS, 1-lb. to 10,000 or more. Inter-State Foundry & Machine Works JOHNSON CITY TENNESSEE

ELECTRIC STEEL CASTINGS

Weighing from 1 lb. to 500 lbs. each

ly Production A Specialty

Nickel, Chrome and Other Alley

Quick Delivery

Inquiries Solicited

CRUCIBLE STEEL CASTING COMPANY LANSDOWNE, DELAWARE COUNTY, PA.

DEPENDABLE CASTINGS
Shipped PROMPTLY CASTING PATTERN and MACHINE WORK CASTING CO. DEEMER NEW CASTLE, DELAWARE

QUALITY PIG IRON

Intelligent Cupola Service

SLOSS-SHEFFIELD STEEL & IRON CO. BIRMINGHAM, ALA.

John A. Roebling's Sons Company Trenton, New Jersey.

Centralized Control-

insures unvarying high and uniform quality

RODUCING its own raw materials, handling every manufacturing process in its own plants, Youngstown insures success for its products by the elimination of outside influences. This centralized control is a whip that compels rigid adherence to the highest, unvarying quality.

And with this standard of quality goes the Youngstown tradition of service which places the customer's needs first and cuts red tape to meet a customer's emergency.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid"

General Offices-YOUNGSTOWN, O.

DISTRICT SALES OFFICES

ATLANTA—Healey Bldg.
BOSTON—80 Federal St.
BUFFALO—
Liberty Bank Bldg.
CHICAGO—Conway Bldg.
CINCINNATI—
Union Trust Bldg.
CLEVELAND—
Terminal Tower Bldg. Terminal Tower Bldg.
DALLAS—Magnolia Bldg.

Andrus Bldg. NEW ORLEANS— Hibernia Bldg. NEW YORK-30 Church St.

DENVER—Continental Oil Bldg.
DETROIT—Fisher Bldg.
KANSAS CITY, MO.—
Commerce Bldg.
MEMPHIS—P. O. Box 462
MINNEAPOLIS—
Andrus Bldg.
NEW ORLEANS—
Hibernia Bldg.
NEW YORK—30 Church St.

PHILADELPHIA—
Franklin Trust Bldg.
PITTSBURGH—Oliver Bldg.
SNN FRANCISCO—
55 New Montgomery St.
SEATTLE—Central Bldg.
ST. LOUIS—
521 Louderman Building
YOUNGSTOWN—
Stambaugh Bldg.

LONDON REPRESENTATIVE—The Youngstown Steel Products Co., Dashwood House, Old Broad St., London, E. C. Eng.



SAVE WITH STEEL GALVANIZED SHEETS PROTECT -::-

McClintic-Marshall Company

Steel Bridges and Buildings Tanks, Barges, Pipe, Transmission Towers and Plate Work

General Offices:- PITTSBURGH, PA.

OFFICES IN PRINCIPAL CITIES





RICHMOND STRUCTURAL STEEL CO.

ORNAMENTAL IRON - GREY IRON CASTINGS RICHMOND, VA. NORFOLK, VA.

ROANOKE IRON & BRIDGE WORKS, Inc. Structural and Ornamental Iron **Wrought Steel Fences**

Gray Iron Castings FROM 1 TO 10,000 LBS.

Write for Estimates

ROANOKE, VA.

ATLANTIC BRIDGE COMPANY

ENGINEERS · CONTRACTORS · ERECTORS BRIDGES · FOUNDATIONS · BUILDINGS GREENSBORO, NORTH CAROLINA

LE BRIDGE COMPANY

CONVERSE BRIDGE & STEEL CO. STRUCTURAL STEEL

Industrial Buildings, Mines, Refineries, and the Building Trade

CHATTANOOGA

TENNESSEE

CAROLINA STEEL & IRON COMPANY GREENSBORO, N. C.

Office:-709 Nissen Bldg., WINSTON-SALEM, N. C. Structural Steel FOR Buildings and Bridges

Capacity 1000 Tons per Month. 3000 Tons in Steck The Largest Steel Fabricators in the Carolinas



STEEL insures strength security

STEEL DOORS STEEL TRIM SHEET METAL

PRODUCTS



THE PHOENIX IRON CO.

MANUFACTURERS OF OPEN HEARTH

Structural Steel Shapes, Beams, Channels, Angles, and Ship Shapes
ks: Phoenixville, Pa. Main Offices: Philadelphia, Pa.

Works: Phoenixville, Pa.

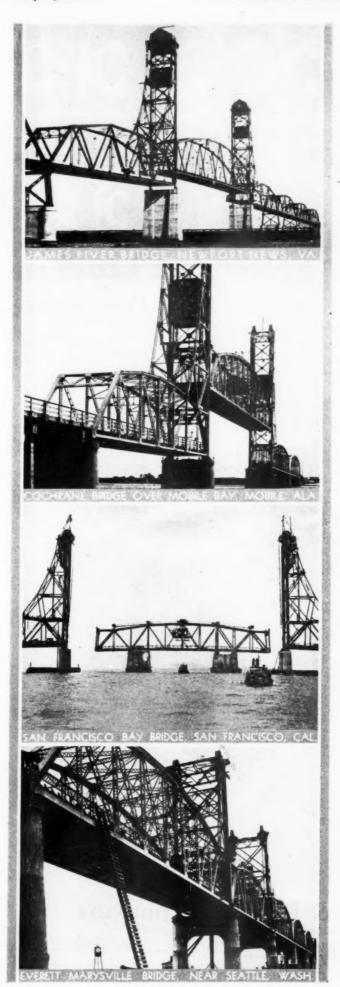
OFFICES:
22 S. 15th St., Philadelphia 30 Church St., New York
Munsey Building, Washington 110 State St., Boston
City Savings Bk. Bidg., Albany, N. Y. 26 Victoria St., London

THE PHOENIX BRIDGE CO.

Engineers, Fabricators, and Erectors Bridges and Other Structures of Steel CAPACITY 60,000 TONS

Works and Engineering Office:

Phoenixville, Pa.



Weight and Counterweight

WITH each Vertical Lift Span there are two counterweights, one at each end to counterbalance the weight of the lift span as it raises up and down. Sheaves, cables, gears and motors properly coordinated and synchronized permit easy operation and lifting of hundreds of tons of weight.

We have built in the past twenty years or more a great many vertical lift bridges throughout the country. This is only one of the many kinds of steel work, both bridges and buildings which we do. But it is probably the most exacting to be found. And its successful handling indicates a thoroughly capable organization to which may be safely intrusted all problems of steel design and construction.

Let us furnish you designs and estimates on your steel needs whether they are large or small. If you have not decided to use steel, let us show you its advantages and economies. No obligation is involved.

VIRGINIA BRIDGE & IRON CO.

Roanoke Birmingham Memphis Atlanta New Orleans New York Los Angeles Charlotte Dallas El Paso

VIRGINIA BRIDGE

James River Bridge: More than 5 miles long and crosses the historic James River just above its mouth at Newport News. The engineers were J. E. Greiner Company, Baltimore, Md., and Turner Construction Co., New York, general contractors.

Cochrane Bridge, over Mobile Bay: This Lift Span is 325 feet long and raises to a clear height of 135 feet above water. Harrington, Howard & Ash, Kansas City, Mo., were engineers and Kansas City Bridge Co., Kansas City, General Contractors.

San Francisco Bay Bridge: One of the longest highway bridges in the world, 7 miles in length. Waddell & Hardesty, New York, Engineers, and Raymond Concrete Pile Co., New York, General Contractors. View shows lift span being floated into place by our erection forces.

Everett-Marysville Bridge: An important highway bridge hook-up by the State of Washington, on which we furnished a number of fixed spans, 2 swing spans and a vertical lift. J. A. McEachern Co., Seattle, were General Contractors on the entire project. Waddell & Hardesty were Engineers on the lift span.



grows 12 stories where 3 stories were

The adaptability of structural steel is well illustrated in the new home of the Protective Life Insurance Company, Birmingham. This was originally a three-story, steel frame building, designed so as to permit some increase in height when and if needed. To meet the requirements of the new owners, it has been converted, by reinforcing the original columns, into a fifteen-story office building of the most modern architecture and appointments.

Framework of Tennessee Structural Steel.



Tennessee Coal, Iron & Railroad Company General Offices: Brown-Marx Building, BIRMINGHAM, ALA.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES:

AMERICAN BRIDGE COMPANY

AMERICAN SHEET AND TIN PLATE COMPANY

AMERICAN SHEET AND TIN PLATE COMPANY

AMERICAN SHEET AND TIN PLATE COMPANY

AMERICAN STEEL AND WIRE COMPANY

FEDERAL SIPPSULIDING AND DRY DOCK COMPANY

FOR Coast Distributors—United States Steel Products Company, San Francisco, Los Angeles, Portland, Seattle, Honolulu. Expert Distributors—United States Steel Products Company, New York City



MODERN industrial efficiency requires flexible crane service. That is why many progressive plants are using crawler cranes.

For the crawler crane solves your handling problem. It is a tool that pays its own way and earns profits. It goes anywhere, any time, without tracks of any kind. Any path is a right-of-way for a P & H Crawler Crane.

And P & H Corduroy (Crawler) Cranes put all this flexibility, all this usefulness on a speed basis. They do the job quicker.

A company which daily turns out thousands of differential housings for a well-known automobile, formerly used a locomotive crane to load them for shipment. It took nearly two hours to place 6,000 aboard a car. Now, a P & H does the job in 55 minutes—half the time.

If you have a handling problem, you should learn of the advantages of P & H Corduroy Cranes. Write for descriptive bulletins.

HARNISCHFEGER CORPORATION

Established in 1884

National Avenue Milwaukee, Wisconsin

Bronch Office: Atlants, Baltimore, Birmingham, Charlette, Dallas, Jacksonville, Kanasa City, Memphis, St. Louis.

Woreheuses & Sorvice Stations: Dallas, Jacksonville, Memphis

ALBUQUEBQUE R. L. Harrion Co ATLANTA R. B. B. Brestit & Co HOUSTON R. B. B. Brestit & Co JACKSONVILLE Burgman Tractor Equip. Co MIAMI McDonald Tractor Equip. Co NEW ORLEANS Southers States Equip. Co OKLAHOMA CITY Wylle Brok. IN ST LOUIS M. G. Hennessey Machinery Co



9983

INGOT IRON

prolongs the usefulness of your sheet and plate equipment

I F your sheet and plate equipment is to be a profitable investment, you must be sure of getting a metal that resists rust and corrosion. Such a metal is Armco INGOT

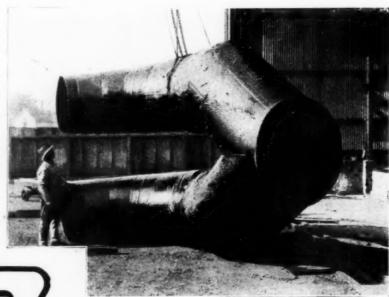
This scientifically-made iron has the longest record of actual service of any low-cost, rust-resisting sheets and

plates. It has other properties and advantages, too workability, weldability, heat conductivity, resistance to oxidation at elevated temperatures, electrical conductivity, and consistent uniformity.

If you are concerned with one or more of these qualities, an Armco Development Engineer can show you the way to long, satisfactory service.

Write or wire the nearest

This huge reducer joint made for the Champion Coated Paper Company, Hamilton, Ohio. required three essential qualities: Workability, weldability, and corrosion resistance.



Back of this familiar trade symbol is nearly thirty years experience in the manufacture of special analysis iron and steel sheets and plates. When you seek a rust-resisting, low-cost metal be sure to see this triangle and the words, "Armeo INGO". It is your assurance of adequate and dependable service.

THE AMERICAN ROLLING MILL CO.,

Executive Offices, Middletown, Ohio Export: The ARMCO International Corporation

District Offices:

Chicago Cincinnati Cleveland

Detroit New York Philadelphia

Pittsburgh St. Louis San Francisco

"BE SURE IT'S

MADE OF ARMCO INGOT IRON"

Most air per minute PER DOLLAR INVESTED



ICKLY yellow fumes . . . hot, stifling clouds of steam . . . floating dust and grit-once these were indication of a busy, prosperous plant.

Executives of today, however, realize that workers cannot give their best in an uncomfortable, unhealthy atmosphere . . . and those who have installed Swartwout Rotary Ball Bearing Ventilators to eliminate these undesirable elements have found good ventilation to be a definite aid to production.

Once a battery of Swartwouts is installed on the roof, you can rest assured that your plant will be effectively and economically ventilated for years to come . . . effectively because of the unique design which is so correct scientifically that a steady suction from within always exists, even when outside air movement is below normal ... economically because of the unusual construction which includes a rust-resisting body of Armco Ingot Iron and ball bearings of hardened bronze.

You undoubtedly have been thinking of ventilation. With hot, sultry weather only a few weeks away, you should give serious consideration to the subject immediately. Send for the interesting booklet, "The Gospel of Fresh Air," then. It tells much of ventilation . . . and, of course, something more of Swartwout Ventilators and how they move the most air per minute per dollar invested.

Swattwout trotary Vontilators

U	ACT	TMC	BEARING V	CIILIII	LOI 2
			MADE ON		

THE SWARTWOUT COMPANY

We are interested in ventilators for.....

☐ Send us "The Gospel of Fresh Air." ☐ Send Engineer.

18501 Euclid Avenue, Cleveland, Ohio

For the Good of



KOEHRING

Pavers, Mixers; Power Shovels, Pull Shovels, Cranes, Draglines; Dumptors.



Excavators; Concrete Placing Equipment, Cars, Buckets, Derricks.



Tilting and Non-tilting Mixers, Pavers, Weigh-Mix.

PARSONS

Trench Excavators, Backfillers.

C. H. & E.

Portable Saw Rigs, Pumps, Hoists, Material Elevators.

KWIK-MIX

Mixers: Concrete, Plaster and Mortar-



CHEE.

KWIEMDE



J. L. Hart Machinery Company 407 Eunice Avenue, Tampa, Florida

The Young & Vann Supply Company 1725 First Avenue, Birmingham, Alabama

Wilson-Weesner-Wilkinson Co., 108 Fatherland St., Nashville, Tenn.

Graham B. Bright 901 Electric Bldg., Richmond, Virginia

National Dquipment

Contracting

In every business it's the irresponsible, short-sighted competition that's destructive both to itself and others.

The contractor who bids to get the job rather than make a profit, who is operating without sufficient capital or experience, hurts the competent contractor and the man who pays the bills — the taxpayer.

That's why — for the good of contracting — N.E.C. even at the loss of sales will not join in unethical sales policies and practices or unreasonable terms certain to encourage destructive competi-

tion.

D. C. Elphinstone, Inc.
120 S. Calvert St., Baltimore, Md.
General Equipment Machinery Co., Inc.,
116 N. E. Sixth Street, Miami, Florida
W. C. Caye & Company
160 Walker Street, Atlanta, Georgia
Carolina Contr. Equipment & Supply Co.
P. O. Box 576, Columbia, S. C.





orporation 30th St. & Concordia Ave



A 5704-II-C



A Little History

Mark the steps in steel floor development

F i r s t —rod-and-bar grating. (Everybody made it—some make it today).

N e x t — "egg-crate" bar grating, in panels.

(Irving made it once—some continue to make it).

The n—"reticuline" mesh grating-flooring, in panels.

(Irving originated it—many still follow his lead).

And Now—CONTINUOUS "reticuline" flooring and armoring. (Irving originated it—Irving alone produces it).

Can you be satisfied with any of the first three obsolete types, when you can have IRVING CONTINUOUS Steel Flooring and Armoring—AT NO EXTRA COST?

Write for Bulletins 2H9 and 2K9

IRVING IRON WORKS CO.

Long Island City, N. Y., U. S. A.

British Licensees: Estler Brothers, South Molton Road, Victoria Docks, London, E. 16, England Canadian Licensees: Crowe's Iron Works, Ltd., Guelph, Ontario, Canada

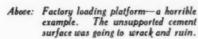
FIOORING AND ARMORING

THE KIND OF A FLOOR YOU HAVE ALWAYS NEEDED

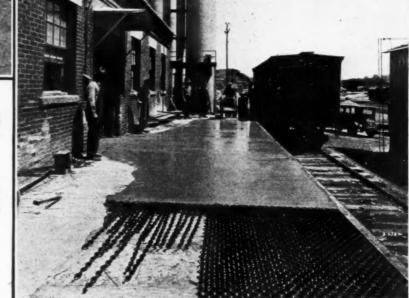


Floorgard

Makes It Possible



At right: The surface was chipped off with prieumalic hammers and permanently restored with a backbone of FLOORGARD.



actory floors and loading platforms come in for a lot of wear and tear—inevitably get full of cracks, potholes and saucers—always need repairs—because they lack backbone. Floorgard (steel mesh) was designed to supply this omission and to give you the smooth trouble-proof floor you have always wanted. Floorgard is easily and quickly applied without the use of tools and assures a floor that will last for many years without maintenance. Floorgard takes the wear and tear without wearing. Ask us for complete information on Floorgard without obligation.

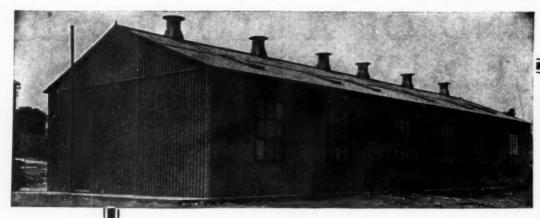


Send today for illus -

trated catalog and for

a "Request for

Estimate"



Roof and side walls of every Maryland Metal Building built of rigid interlocking sections of Lyonore Metal, the alloy chemically balanced to resist corre-

when time and economy are factors

A familiar demand to Maryland Metal Building engineers—an urgent request for a building, for speed and a welcome price!

Buildings for every purpose—serviceable, fire-proof, permanent—are built "Standard" to save you time and money-are ready on instant demand.

Let us give you an estimate--no obligation whatsoever

Maryland Metal Company

New York

Chicago

BALTIMORE, MARYLAND Detroit Philadelphia

Atlanta

Richmond



Snead Architectural Iron Works STRUCTURAL STEEL ORNAMENTAL IRON LOUISVILLE, KY.

DIETRICH BROTHERS

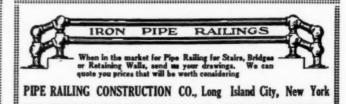
Structural and Ornamental Iron and Steel Works Large Stock of Standard and Bethlehem Shapes CONCRETE REINFORCEMENTS BALTIMORE, MD.



619 Stewart Block

EWART IRON WORKS (OMPANY

CINCINNATI, OHIO



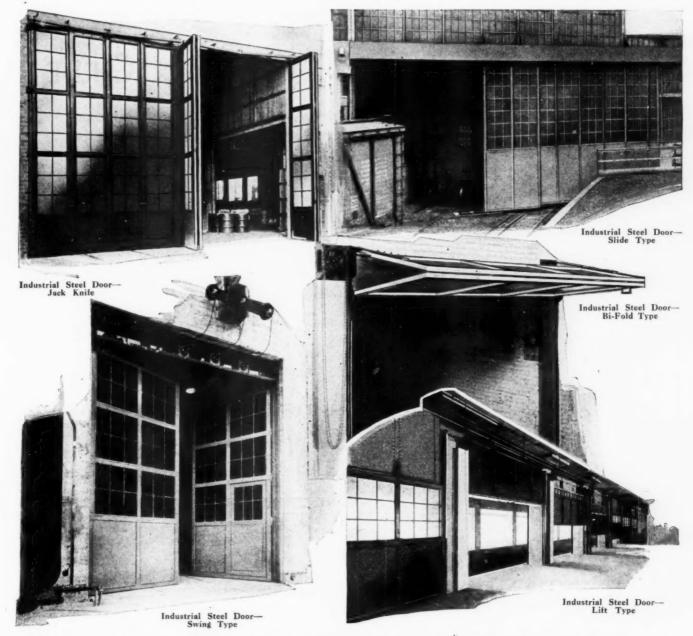
DUFUR, BAGGOTT & CO.

BRASS AND STEEL WIRE WORK OF EVERY DESCRIPTION

k Work Elevator Enclosures Elevator Cabs nter Railings Grills Wickets Guards Partitions Skylight Protectors, Etc.

403 N. PACA STREET

BALTIMORE, MD.



CHOOSE YOUR DOORS CAREFULLY

Doors are important features of successful industrial buildings. Look not only to their fire protection, but to their efficiency.

Select Truscon Steel Doors to meet every requirement. Protect your building permanently with their sturdy steel construction. Save time and expense by having doors in your factory suited to your needs.

Truscon Steel Doors are furnished in all sizes and types, including Slide, Swing, Folding, Lift, Bi-Fold, and Lift-Swing Doors. Standard Doors in Swing and Slide Types are stocked for immediate delivery in Truscon Warehouses throughout the country.

Truscon Engineers will gladly study your requirements, make recommendations and quote prices. Write for complete door literature.

TRUSCON STEEL COMPANY, YOUNGSTOWN, OHIO

Warehouses and Offices in Principal Cities -- Truscon Steel Company of Canada, Limited, Walkerville, Ontario



STEEL DOORS



No. 4054

THE CUTLER MAIL CHUTE

Combines in the perfected Model F the result of long experience in meeting the exacting requirements of public use under Post Office Regulations—and the latest architectural development.

Simple and substantial in construction, durable in finish; with an interesting series of stock and semi-stock Mail Boxes of marked individuality from which to select.

Also intelligent and appreciative execution of special designs in any metal desired.

Correspondence invited.

THE CUTLER MAIL CHUTE CO. GENERAL OFFICES AND FACTORY ROCHESTER, NEW YORK

THE NATIONAL STANDARD



DOORS

COVER THE COUNTRY

14 YEAR RECORD WITHOUT FAILURE IN FIRE OR SERVICE HIGHEST QUALITY-LOWEST COST **GUARANTEED TWENTY YEARS**



MANUFACTURED BY

Merchant & Evans Co. Philadelphia, Pa.



This Expansion Metal Casing Is A Profitable Best Seller

to the casing in a way that is permanent. The neat metal casing adds a touch of distinction around windows and information.

The expanded metal doors and may be finwings key the plaster ished in same tone as the walls. Every home and other building is a logical prospect. Drop us a line for complete

MILWAUKEE CORRUGATING CO. Milwaukee, Wisconsin 1451 Burnham Street

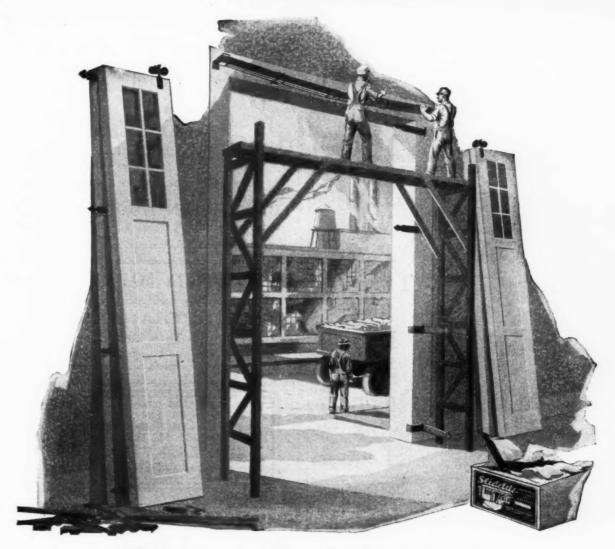
Branches: Chicago, Ill., Kansas City, Mo., Lacrosse, Wis.

Sales Offices:

Boston, Mass., Atlanta, Ga., Little Rock, Ark., Minneapolis, Minn., New York, N. Y.,

Eastern Plant: THE ELLER MANUFACTURING CO., Canton, Ohio

MILCOR PRODUCTS



Doing the job over

I large percentage of our volume is in replacements.

Scarcely a day passes that one or more of our service branches are not called on to tell somebody what to do with doors that won't work.

In nearly every case, the trouble is that somebody — builder, architect, owner; generally owner—"saved money" on in the end.

70U'D be surprised to know that a cheap door-hardware; and the result is that the job has to be done over. A door that's improperly equipped doesn't work; and a door that doesn't work is worse than no door at all.

> "Doing the job over" is a costly operation; hardware too light for the work; or made to sell at a price; or mistakenly designed for its duty. The right thing even at a higher price would have cost less

Richards-Wilcox doorway engineers will show you how to avoid all this, if you ask them. Their service is free; but it is worth money to you.



Richards-Wilcox Mfg. Co.

Branches: New York Chicago Boston Philadelphia Cleveland Indianapolis St. Louis New Orleans Des Moines Minneapolis Los Angeles San Francisco Omaha Seattle Detroit Richards-Wilcox Canadian Co., Ltd., London, Ont. Montreal



USE 30 to 40% more Material to BAG of LIME or CEMENT with a Blystone

THRUADOOR



Will
Pass
Thru A
30"
Door
or an
Opening
Six
Feet
Square

for mixing

PLASTER-MORTAR-CONCRETE

The Blystone Thru-A-Door Mixer will save you money the first day you use it. It can be used on any part of the job INSIDE and OUT-SIDE. It is easy to move from floor to floor or from one part of job to another where it can be MOST EFFICIENTLY used.

You make a big saving in materials, to say nothing of all the money you save in labor. The Blystone Patented Spiral Shovel System mixes so thoroughly that you can add 30 to 40% more material to a bag of cement or lime and obtain as strong a mix. WE DON'T ASK YOU TO TAKE OUR WORD FOR IT BUT WILL LET YOU USE ONE AT OUR RISK. Write a letter and obtain the details.

Write for Circular and Prices

BLYSTONE MANUFACTURING CO.

530 Record Street

Cambridge Springs, Pa.

STEEL PLATEWORK

Every description of fabricated steel

TANKS—RECEIVERS—CHUTES—TRAYS—ORE BINS DREDGE PIPE—SMOKE STACKS—BREECHINGS

Electric and acetylene welding and cutting.

TILE



for Residences, Business and Industry

Some new, lower cost types in pleasing natural colors. The most economical roof.

Request literature. Send plans for cost.

B. MIFFLIN HOOD COMPANY
Department M. DAISY, TENN.

THE GEORGIA MARBLE COMPANY

Producers and Manufacturers of

GEORGIA MARBLE

Tate, Georgia

Atlanta Chicago Cleveland Dallas New York





AMERICAN ELEVATORS PASSENGER AND FREIGHT

AMERICAN
ELEVATOR and MACHINE CO., INC.
Established in 1898
LOUISVILLE, KENTUCKY

WARSAW ELEVATOR CO. BALTIMORE, MARYLAND

Passenger--Freight Elevators
Dumbwaiters
Organ Console and Orchestra Pit Lifts

Manufacturers Of

ELECTRIC AND ELEVATORS FREIGHT AND HAND POWER DUMB WAITERS

MILLNER COMPANY St. Louis, Mo.

Color_

As Important for Buildings as for Commodities

A striking and certainly a most successful step forward in Atlanta Terra Cotta is the development of Abbochrome Colors. They are new without being odd, they have texture without exaggeration.

they have warmth and depth of tone, they have all the practical advantages of Atlanta Terra Cotta, and they add nothing to the cost.

Primarily intended for exterior facades they have proved remarkably adaptable for base colors in architectural polychromy. The varying color values of Abbochrome, the softness of texture and warmth of tone make the best possible background for colors.

Abbochrome colors are combinations of two or more harmonizing colors shaded and merged together. There is a long series: blended cream and ivory, tan and sienna, black and white, brown and buff, and many other combinations.

The texture is slightly rough and the surface dimly luminous. Wide variation prevents the monotony of flat colors, and the softly glowing surface is most attractive. When polychrome glazes are ap-

plied over an Abbochrome base they acquire the rough texture and variation of the Abbochrome. The result is refinement.

The advantages of Abbochrome Terra Cotta for interiors are apparent. In addition to its interesting texture and beauty of color the surface is impervious and consequently thoroughly sanitary. It never needs renovation and it can be easily kept clean with soap and water.

Atlanta Terra Cotta Company

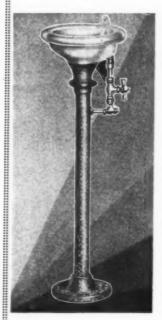
Citizens & Southern Bank Building

Atlanta, Georgia

Factory at East Point, Georgia

Southern Factory of Atlantic Terra Cotta Company 19 West 44th Street New York Southwestern Office
A. P. Clark, District Manager
Praetorian Building
Dallas, Texas

During those "Warm Spells"



Rundle - Spence drinking fountains in your plant will invigorate your workmen. They will provide good, clean, fresh drinking water at a time when "warm spells" retard production.

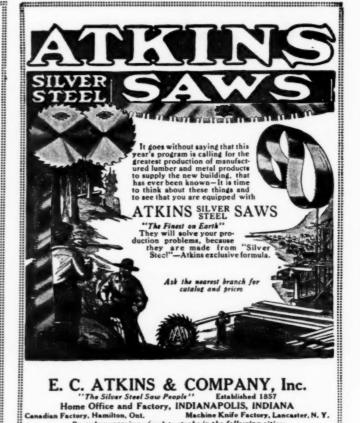
Besides every one must drink sanitarily from R-S Vertico Slant Fountains—lips cannot touch the nozzle-this is a feature which means much to you - to your workmen.

Let us send you an illustrated catalog.

Write for it today.

RUNDLE-SPENCE MFG. CO.

63-Fourth St., Milwaukee, Wis.



Oil--Water--Gas Lines Hydro-Electric Penstocks Interior Hull Protection Tank Protection Concrete Waterproofing

FOSTER I.B.M. Impregnated Bituminous Materials PROTECTIVE COATINGS--PAINTS--CEMENTS

Write for Foster Catalogue

BENJAMIN FOSTER COMPANY

Manufacturers -- Contractors -- Distributors 20th and Venango Streets

PHILADELPHIA

Structural Steel Paints Industrial Paints **Plastic Cements** Floor Cements for Wood Block--Linoleum and Tile

W E are the sole and only manufacturers of the m known under the trade name and trade mark

"CEMENT GUN"

Let us aid you by giving you full information how your new construction or repair is made with this machine and its product GUNITE

Experience Has Taught Us All Best Methods

CEMENT GUN CO., INC., Allentown, Penna.

Cement Gun Construction Work

THE RUST ENGINEERING CO. Engineers and Contractors on all kinds of Cement-Gun Work

WOODWARD BUILDING, BIRMINGHAM, ALA. New York Pittsburgh Washington

WINDOW PLATE ART

GLASS

BEVELING SKYLIGHT

STORE FRONT CONSTRUCTION

RAYMOND SPRINGS

For satisfaction and long service

Write for catalogue and consult our Engineering Department on your spring problems.

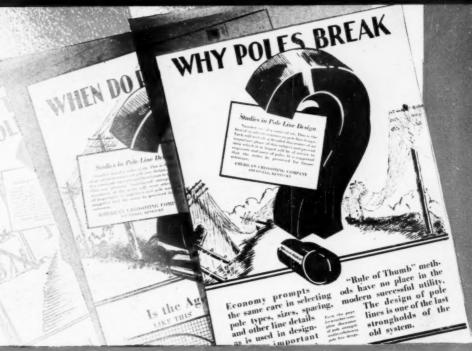
RAYMOND MFG. CO. CORRY, PA.

A B C By-Product Foundry Coke A B C By-Product Gas Making Coke

A B C By-Product Domestic Coke LOWEST IN SULPHUR

LOWEST IN ASH "Alabama's Best Coke"

HAMMOND IRON CO., Birmingham, Ala.



Studies in Pole Line Design All lead to one conclusion:

Build lines with



On the other side see how AmCreCo poles provide such strength



that Lasts?"

As has been repeatedly em-phasized in the "Studies in Pole Line Design" previously published by this company, strength in poles promotes pole line economy, because smaller

sizes and longer spans can be used. Similarly, long life cuts pole line costs by spreading the investment over a longer period, and poles that have practically the same strength throughout their life enable the designer to use a lower factor of safety, thereby further reducing the size or increasing the span.

"Strength that Lasts" covers all three of these basic

factors which enter so prominently into pole line economy. It means high initial strength, long life, and most important of all-undiminished strength at the end of a period which equals the life of an ordinary The studies referred to brought out the fact that AmCreCo poles possess this characteristic of strength that lasts" to a very special degree. The reasons for this will be explained fully in this and succeeding discussions of this subject.

Why AmCreCo Poles provide these advantages-

Since there is no absolute standard by which to measure "strength that lasts," any claim to this distinction must rest on a comparison with all other types of poles which might provide that characteristic without excessive cost. It is practically selfevident that AmCreCo creosoted Southern Yellow Pine poles have "strength that lasts" as compared to any untreated or butt treated poles. Pine has an allowable fibre stress much higher than any other species of pole timber-7400 lbs. per sq. in. according to the most recent authority. That assures high initial strength. When creosoted by the Lowry process the life of this wood can safely be taken at 30 to 40 years. The most complete service records ever kept on creosoted timber support this statement.

What is "Strength And while it is evident that any less perfectly preserved pole begins to deteriorate immediately and perhaps quite rapidly, tests on timber comparable to AmCreCo poles show practical-

ly no deterioration after 30 years and more of hard service.

But AmCreCo poles also justify the claim of "strength that lasts" in comparison with other creo-soted pine poles. There is considerable difference in pine, but there is no better Southern Yellow Pine than that selected by this company. And the treatment

insures maximum life with minimum rate of deterioration. Specifications for treatment cannot cover such matters as knowledge of the source of creosote oil. Buying on price encourages expedients in treatment which are not tolerated in this organization. We do not guarantee to ship any quantity of poles from stock because that could not be done without sacrificing the ultimate quality of the product. Our organization, maintained to

select, handle, and test creosote oil, our technical and research staff, and our seventeen treating plants strategically located for service, back up the reputation of AmCreCo poles for "strength that lasts."

Poles that meet a wide variety of conditions-

"Strength that lasts" is a decided advantage in almost any type of line construction when full advantage is taken of the high unit strength of AmCreCo poles and the low factor of safety made possible by the uniform strength curve.

The absence of deterioration of these poles throughout the normal life of a line maintains the factor of safety for which the line was designed and gives definite assurance against interruptions to service clear up to the end of the period on which the design is based.

A copy of our series of "Studies in Pole Line Design" will be sent on request to any one interested in considering this subject more fully.

CREOSOTING COMPANY

COLONIAL CREOSOTING COMPANY



GEORGIA CREOSOTING COMPANY

SALES OFFICES: CHICAGO

GENERAL OFFICES: LOUISVILLE, KY.





Designers, Manufacturers and Contractors

BLOW PIPE INSTALLATIONS also High Pressure Long Distance Blower Systems

NATIONAL BLOW PIPE & MFG. CO., LTD. NEW ORLEANS, LA.

Delaware Wood Preserving Co.

Sales Office: Finance Building, Philadelphia Plant: Newport, near Wilmington, Delaware

SERVICE

ALL forest products treated with all standard preservatives by all standard processes.

CALCASIEU

Long Leaf

Yellow Pine

"Supreme Structural Wood of the World"

MANUFACTURED BY

INDUSTRIAL

LUMBER COMPANY, INC.

ELIZABETH

Gulf States Creosoting Co.

HATTIESBURG, MISS., MERIDIAN, MISS., JACKSON, MISS., SLIDELL, LA., BRUNSWICK, GA., BIRMINGHAM, ALA. Main Office: HATTIESBURG, MISS.

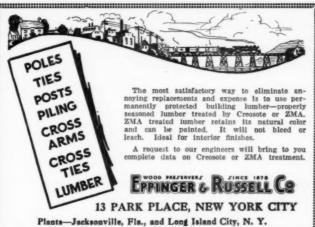
CREOSOTED MA

INCLUDING

Lumber, Timbers, Piles, Telephone and Telegraph Poles and Cross-Arms, Cross-Ties, Etc.

also treat with Zinc Meta-Arsenite (colorle







CREOSOTED TIMBERS

for all purposes

CROSS TIES

POSTS PILING BRIDGE MEMBERS MINE SHORING

Send for Catalogue

Taylor-Colquitt Company
Spartanburg - South Carolina

Creosoted Ties, Piling, Poles and Timbers Creosote Oil Docks for Ocean Vessels

American Creosote Works, Inc. New Orleans, La.

Savannah Creosoting Co., Inc. Savannah, Ga.

Atlantic Creosoting Co., Inc. Norfolk, Va.

Northern Hard Rock Maple Flooring

Holt Hardwood Co., Oconto, Wis.

MEMBERS OF MAPLE FLOORING MANUFACTURERS ASSOCIATION

THIS entirely different two-base Motor Oil is just what you have been wanting—it is a tough, heat resisting, able-bodied oil, designed for the lubrication of the modern motor-it is made by combining the best properties of both the paraffine and naphthene base crude oils-it possesses all of the good and none of the bad features of single base oils.

At the Sign of the Orange Disc

GULF REFINING CO.

ANGLE STEEL EQUIPMENT

for Factory, Shop and Office

Angle and Sheet Steel Textile Mill and General Manufacturing

Stools, Chairs, Desks, Bench Legs, Tables, Benches, Cabinets. Trucks, Machine Tenders, Bins, Pans, etc.

Send for Catalog "C-M.R."

ents and Dealers in all Principal Citia Angle Steel Stool Co.





Architectural Bronze

Banks, Buildings, and Mausoleums

J. S. Heath Co.

Waukegan, Ill.



Hotel Mayfair..

8th and St. Charles

oin and St. Charles

In the center of theatre and shopping districts. Floor lamps, fans, circulating ice water in every room. The quiet, refined atmosphere of an exclusive club—an hotel of distinction. Dining room. Coffee shop. Garage service.

400 ROOMS - \$300 to \$600



Hotel Lennox

9th and Washington

St. Louis' newest and smartest hotel opened September 3rd. In the heart of business district. Dining room. Coffee shop. Garage service.

400 Rooms with tub bath and shower — \$300 to \$600



Hotel Kings-Way ...

West Pine at Kingshighway

Opposite beautiful Forest Park. Near bus, street
car and motor highways. 20 minutes from downtown.
Club breakfasts, table d'hote dinners. Rooms for
two from \$4. Special rates for permanent guests.

Heiss Hotel System кмох

Your ADVERTISEMENT

in these pages places your facilities before the leaders in manufacturing and industrial operations in the South and Southwest. creating wider markets for your products.

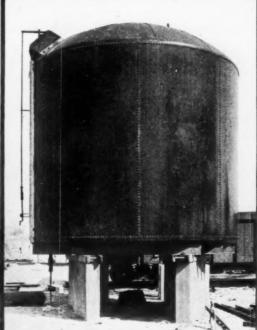
> Advertising rates gladly submitted upon request

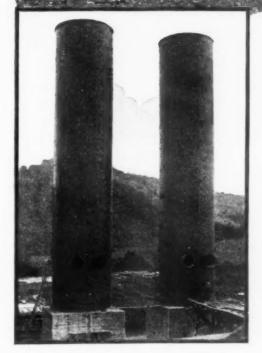
MANUFACTURERS RECORD **Baltimore** Maryland

. .

Below: Cylindrical tank ready for shipment. It is 10 feet in diameter and 25 feet long. Right: 175-ton acid tank erected at a copper plant in El Paso, Texas.







Two vertical lime kilns erected at Ivanhoe, Virginia. They are 14½ feet in diameter and 70 feet high.

Tanks and Steel Plate Work ••• from Birmingham

We are now equipped to fabricate tanks and steel plate work for Southern locations at our centrally located plant at Birmingham. Field erected work is put up promptly with our own experienced crews, which are available for any location. Cylindrical tanks are shipped completely riveted up, with or without supports.

Tanks for special purposes and heavy plate work such as kilns and other products mentioned below are built to meet your special requirements. Quotations are made to your specifications or on designs made up in cooperation with your engineers.

Write our nearest office for information or quotations on any of our products. It will be sent without obligation to you.

Chicago Bridge & Iron Works

Birmingham 1530 Fiftieth St.	North
Atlanta2045 Rhodes-Haverty	Bldg.
Dallas	
New York3113 Hudson Terminal	Bldg.
Cleveland2216 Union Trust	Bldg.

Chicago2106 Old Colony	Bldg.
San Francisco1040 Rialto	Bldg.
Philadelphia1619 Jefferson	Bldg.
Detroit	Bldg.
Boston1510 Consolidated Gas	Bldg.

B-14

Elevated Tanks - Storage Tanks - Standpipes - Cylindrical Tanks - Pressure Tanks Acid Tanks - Kilns - Creosoting Cylinders - Tie Retorts - Smokestacks - Blast Furnaces - Steel Ladles - Coke Ovens - Gas Holders - Hortonspheres - Riveted Pipe - Penstocks - Steel Bins - Oil Refinery Equipment - Wiggins Roofs - Tank Cars

Two-Main construction along Michigan Boulevard, Chicago, III.



o-Main System Popular

Clow-National furnishes everything for a pipe sys-tem—from the cast iron pipe and fittings to the calking tools.

If you have not received your copy of our "Pipe Economy" catalog, send your name and address.

As an engineering proposition, the two-main system for water lines is now being advocated by many consulting engineers. The two-main system simply is an improved design of water main construction. Its merits can not be talked out of existence.

The two-main system costs no more and often costs less than one main. It is the solution to the problems arising out of wide and heavy-traffic streets in modern city building. It takes the grief out of maintenance problems and service line instal-Write us for additional information. lations.

James B. Clow & Sons Chicago, Illinois

National Cast Iron Pipe Co. Birmingham, Alabams



A Cast Iron main saves \$70,000 for the City of Philadelphia



Fairchild Aerial Surveys, Inc.

THE City of Philadelphia saved \$70,000 by digging up an abandoned 48" cast iron pipe line and relaying it in another location. This pipe line was originally put down in 1888. On examination it was found to be in excellent condition. Consequently the entire line was relaid in

a new location where it is expected to serve for 75 or 100 years longer.

Cast Iron Pipe in large and small diameters has been serving the people of Philadelphia and saving them money for more than 100 years. A recent letter from the Chief of the Water Bureau states: "We have cast iron pipe laid in 1822 (8") and 1827 (6"), both of which appear to be in good condition."

The reason why Cast Iron pipe serves for centuries is because of its effective resistance to rust and corrosion. Gas and water mains of ferrous metal (iron and steel) with the exception of cast iron disintegrate from rust. Cast Iron pipe is



CAST () IRON

The "Q-check" symbol shown above has been adopted as the trade mark of The Cast Iron Pipe Research Association.

CAST IRON PIPE the only ferrous metal pipe practicable for underground mains which rust will not destroy.

Engineers, contractors and city officials desiring detailed information on the efficiency and economy of Cast Iron pipe for water and gas mains, sewers, road culverts or industrial uses

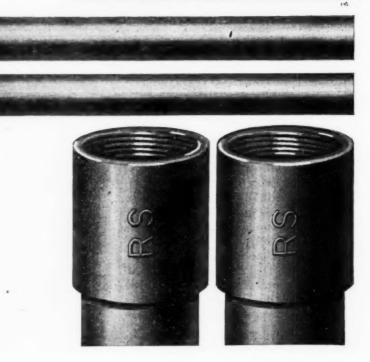
are invited to write to The Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, 309 People's Gas Building, Chicago, Ill.

Cast iron pipe bearing the "Q-check" trade mark is obtainable from the following leading pipe founders: Alabama Pipe Company, Anniston, Ala.; American Cast Iron Pipe Company, Birmingham, Ala.; James B. Clow & Sons, 219 N. Talman Avenue, Chicago, Ill.; Donaldson Iron Company, Emaus, Pa.; Glamorgan Pipe and Foundry Company, Lynchburg, Va.; Lynchburg Foundry Company, Lynchburg, Va.; National Cast Iron Pipe Company, Birmingham, Ala.; United States Pipe and Foundry Company, Burlington, N.J.; Warren Foundry and Pipe Company, 11 Broadway, New York.

Uses For Steel Pipe Form an Unending List

There seems to be no limit to the possibilities of pipe . . . one of the most convenient and serviceable of steel products. For pipe is found in every field where steel can be employed, and in commodities that are listed under every letter of the alphabet. A constantly increasing demand for Republic Steel Pipe for oil country, industrial, commercial and domestic uses, reflects a well-founded confidence in its uniform high quality, its strength and satisfactory service. Its durability has been proved by years of actual service in thousands of installations representing a wide range of varied uses. If you have need for steel pipe, you can specify Republic with full assurance of satisfaction in every requirement.

REPUBLIC STEEL CORPORATION, YOUNGSTOWN O STEEL PIPE



GENERAL FOUNDERS AND MACHINISTS LYNCHBURG, VA.

no calking no bell holes

CAST IRON PIPE -AND FITTINGS -

American Cast Iron Pipe Company SALES OFFICES IN PRINCIPAL CITIES

One-Fifth The



The Weight of Wrought Pipe

Pipe

AN ABSOLUTELY TIGHT DURABLE PIPE

The lap riveted seam repeats its cycle every twelve inches, forming a broadstiffening rib of great value, and makes Root pipe one-third stronger than any other type of pipe construction. Light weight and simple connections reduce transportation handling and erection costs. Suitable for conveying water, air,

exhaust steam and powdered coal.

ABENDROTH & ROOT MANUFACTURING COMPANY

LUDLOW

Fire Hydrants

Ludlow Slide Gate Fire Hydrants are cheapest in the long run. The records they have made in our large cities where many others are in use prove that there is no other hydrant on the market with a greater efficiency and a smaller upkeep cost.

Ludlow Hydrants cannot clog. All working parts are protected from injury by gritty or cutting substances passing through the hydrant. All parts can be removed without digging up the hydrant. Gate-locking device prevents street from being flooded should the standpipe be broken.

Southern Representatives and Distribu-tors: Wm. F. Wiicox, 4th National Bank Bldg., Atlanta, Ga.; Robert M. Spurlock, Shreveport, La.; W. K. Henderson Iron Works & Supply Co., Shreveport, La.; Mid-Continent Supply Co., Fort Worth and Houston, Texas.

The Ludlow Valve Mfg. Co.

TROY, N. Y.

Branch Offices

422 Oliver Bldg., Pittsburgh, Pa. Chicago Philadelphia

THE CAMBRIA CLAY PRODUCTS CO.

MANUFACTURERS
SEWER PIPE - FLUE LINING - WALL COPING
FACE BRICK - FIRE BRICK - FIRE CLAY HOLLOW BUILDING TILE

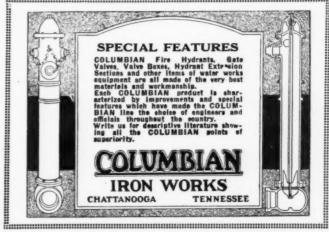
Office and Works - BLACKFORK, OHIO

SALT SEWER AND CULVERT PIPE

Wall Coping, Drain Tile, Flue Lining, Chimney Tops, Hollow Tile, Fire Proofing, Vitrified Brick, Fire Brick

BANNON'S PATENT LIDDED PIPE FOR STEAM CONDUITS

BANNON PIPE CO. LOUISVILLE, KY





10F21

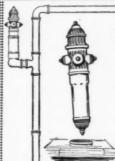
Sizes and Types of Hand and Motor Operated Cold Pipe
Bending Machines we make—bending ½" to 8" Pipe.

Lead the World in Sales and Performance
Cost of Bending
2"—5 cents 2"—5 cents 4"—40 cents 8"—\$1.00
American and Foreign Patents
Over 8,000 in use. Send for Printed Matter and Prices

American Pipe Bending Machine Co., Inc., 11 Pearl Street, Boston, Mass.

JOINTITE WATERTIGHT SEWER PIPE JOINT COMPOUND Also Miller Flush-Tank Siphons, Automatic Sewage Ejectors, Convertible Diaphragm-Plunger Pumps, Sewage Disposal Apparatus. PACIFIC FLUSH-TANK CO.

Write nearest office for catalog interested in 4241 Ravenswood Ave. CHICAGO



Mathews Fire Hydrant

Because the entire barrel, with all parts, is removable, broken "MATHEWS" hydrants are easily replaced without digging.

CAST IRON PIPE and FITTINGS SAND SPUN (Centrifugally Cast) and PIT CAST GATE VALVES VALVE BOXES

FR. D. WOOD & CO.

"The Whole

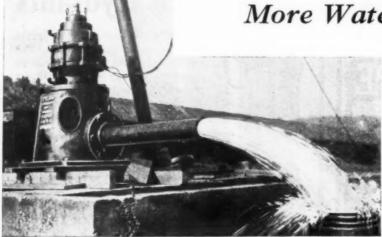
PHILADELPHIA, PENNA.

Works' Out

in a Jiffy In business continuously since 1803

The Right Way to Get

More Water at Lower Cost



A Multipellor Pump at the Pittsburg Coal Co.

Back of "Multipellor" low-cost water delivery are a number of unique and remarkable features of design. First of all, no lubrication is required below the surface. This is made possible by special bearings of chemically treated materials that give smooth, quiet operation without the slightest need of oil. Saves cost of oil, cost of maintenance. Other important features in special folder—write for it.

Luitwieler Pumping Engine Co., Inc. ROCHESTER,

Digging another well and installing just another pump is a costly way to increase your water supply.

The real solution is to get more waterat less cost per gallon.

And that's the job of the "Multipellor"— to deliver more G. P. M. than any other pump of similar size. Reports from "Multipellor" users are strong proof that this pump does its job well.

"... increased delivery from our well from 40 G. P. M. to 150 G. P. M. saved us the construction of a new well and pumping plant delivering 500 G. P. M. under a 100 ft. head with a 25 H. P. motor . . . we now get 175 G. P. M. from our well as compared to 40 G. P. M. . . . " Thus read letters which we have received from scores of Multipellor users.

We may be able to point the way to more G. P. M. per dollar for your plant-get in touch with us.



COOK

DEEP-WELL TURBINE

SELF-OILING-WEATHERPROOF

This is the Pump YOU have been hoping for -

Foolproof - Trouble-proof

t Sturdy Efficient Adaptable

BULLETIN - 36

A. D. COOK, Inc. Lawrenceburg-Indiana

EMERSON STEAM PUMPS

EMERSON FOOT VALVES AND STRAINERS

For Contractors, Mines, Quarries, Cofferdams, and all Rough and Ready Service. Immediate Deliveries

The Emerson Pump and Valve Co., Inc. ALEXANDRIA, VA.

ALLIS-CHALMERS MFG. CO.

MILWAUKEE, WIS., U. S. A.

Steam Turbines, Electrical Machinery, Steam, Gas and Oil Engines, Centrifugal Pumps, Crushing & Cement Machinery, Etc.



WELL PUMPS Single and Double Stroke

Any Drive-KEYSTONE PUMP & DRILL CO.



SAND PUMPS

A wide range of types in sizes 4" to 15" For belt drive and for direct connection to motor Illustrated booklet on request GEORGIA IRON WORKS

AUGUSTA, GA



DAVIS TURBINE WATER WHEELS

Most Powerful, Durable, Dependable, and Economical in use of

Write for catalog.

DAVIS FOUNDRY & MACHINE WORKS

ROME, GEORGIA.

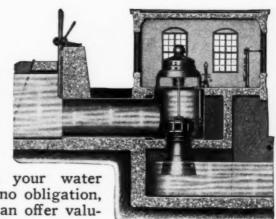
Leffel Turbine Water Wheels



ating cost is high and you need more power —let us show you how to revamp the plant —clean out the pond, and put in a modern high efficiency Leffel Turbine—to put your water power on a profitable basis.

Leffel Engineers have had wide experience in remodeling old water power developments to utilize present dam and power plants on a basis that pays for itself in a comparatively short time.

> Tell us about your water power. There is no obligation, and possibly we can offer valuable suggestions.



The James Leffel & Co. Box 503 Springfield, Ohio

Six Branch Offices in Charge of Competent Engineers



11

d

PLATT IRON WORKS - DAYTON.OHIO. Smith-Vaile (Pumps

> STEAM and POWER PUMPING MACHINERY

Roturbo Centrifugal

MYERS CYLINDERS



Turn your back to cylinder troubles—avoid com-plaints and limited service years—sell and install Myers Cylinders—the com-plete line adapted for any style or type of hand or power pump. Brass, Brass Lined or Polished Styles in all standard sizes. Qualin all standard sizes. Quality built throughout. Reasonably priced. Satisfactory and profitable. Your inquiry will receive prompt attention.

THE F. E. MYERS & BRO. CO., Ashland, O.

LAYNE Well Systems

Provide the most economical method of producing large quantities of water-because they are constructed on a scientific basis. Highest quality of engineering skill.

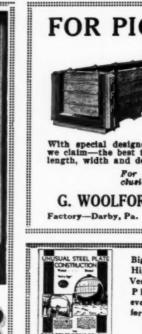
> Write for descriptive bulletin.



LAYNE & BOWLER, INC.

Memphis,





FOR PICKLING STEEL



With special designed acid sealed joints are proving what we claim—the best that are made. 4", 6", 8" material, any length, width and depth. Shipped set up or K. D.

For over seventy years exclusive wood tank builders.

G. WOOLFORD WOOD TANK MFG. CO.

Mail-Paschall P. O., Phila., Pa.



Biggs Welded or Riveted High Pressure Tanks, Vessels, Retorts, and Steel Plate Construction of every description. Write for folder shown at left.



THE BIGGS BOILER WORKS CO. Kent and Bank Streets, Akron, Ohie



Perforated Metal Screens for every purpose

also elevator buckets MITCO Products—In-of all kinds; chutes; terlocked Steel Grating; hoppers; stacks and tanks. Stair Treads;

HENDRICK MANUFACTURING CO.

44 Dundaff St., Carbondale, Pa. New York: 30 Church St. Pittsburgh: Koppers Building





of All Kinds of Metals for All Industries
Write for Copper, Brass, Tin, Zinc or
Aluminum Catalog



Perforated Metal Screens

Put your "hole" problem up to us.

Nortmann-Duffke Co., 1242 27th Ave., Milwaukee, Wis.





We punch and perforate steel, copper, brass, zinc, aluminum, tin and all other metal to meet every requirement.

The experience of 43 years perforating metals is yours for the asking. Our illustrated catalogue will interest you. Copy sent on your request.

CHARLES MUNDT & SONS

490 Johnston Avenue

JERSEY CITY, N. J.

930

TANKS

BOILERS

ENGINES

BARGES

DRYERS

and MACHINERY

BUILT TO ORDER

Write for Further Information

J. S. SCHOFIELD'S SONS CO. MACON, GA.



ELEVATED STEEL **TANKS**

for Fire Protection Dependable Service

STAND-PIPES

BOILERS-STACKS

R. D. COLE MFG. CO. GEORGIA **NEWNAN**



JOSEPH A. JANNEY, JR.

SUCCESSOR TO JANNEY-STEINMETZ & CO.

PHILADELPHIA, PA. 1205 Morris Building

NEW YORK, N. Y. 313 Hudson Terminal

AIR-TIGHT STEEL TANK CO. PITTSBURGH, PA.



TANKS FOR: High pressure gas and air storage—Pneumatic water systems—Gasoline and oil storage—Oil burning equipment—Open top—Welded. ATSCO Genuine Copper Brazed Tanks for high pressure — the tightest, safest, strongest tank it is possible to construct by any known process. ASME code tanks.





STAND PIPES **SMOKE STACKS** TOWERS and TANKS STEEL RIVETED PIPE

Chattanooga Boiler & Tank Co. CHATTANOOGA, TENN.

82 Beaver St., New York City 107-109 Kinney Bldg., Charlotte, N. C.

TANKS

MECKLENBURG IRON WORKS Founded 1858

Consulting Engineers

Sheet and Pints Steel Construction Tanks-Water, Oil, Gasoline, Sys-

CHARLOTTE, N. C.



PITTSBURGH-DES MOINES STEEL COMPANY
11 NEVILLE ISLAND -- PITTSBURGH, PA.
NEW YORK CHICAGO ATLANTA DALLAS MATTLE

DIRECTORY

ARCHITECTS ENGINEERS CHEMISTS **GEOLOGISTS** CHEMICAL ENGINEERS ACCOUNTANTS . CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

Milburn, Heister & Co.

Architoche

WASHINGTON, D. C.

Wm. J. J. Cha-e, A. I. A.

Public and Commercial Buildings 140 Peachtree St ATLANTA, GA.

Geo. Harwell Bond

-A-I-A-ARCHITECT

Candler Building ATLANTA, GEORGIA

G. Lloyd Preacher & Co., Inc.

Architects and Engineers

1204 Wynne Claughton Bldg.,

Chas. T. Main, Inc.

Industrial Engineers
Mills, Warehouses, Complete Developments
ments
Electrical, Steam and Water Power
Reports—Appraisals 201 Devonshire St., BOSTON, MASS.

Claude H. Lindsley

Architecta

Member American Inst. of Architects JACKSON, MISS.

E. S. Draper

Landscape Architect and Engineer Fellow American Society of Landscape Architects

1516 S. 4th St., CHARLOTTE, N. C. 101 Mariotta Bldg., ATLANTA, GA

Kirbye & Company, Inc.

Landscape Engineers
Offering a complete Landscape Service including
Installation of Dayton Underground Sprinkler Systems RALEIGH, N. C.

Wendell P. Miller

ond Associates

AIRPORT DRAINAGE SPECIALISTS

Engineers—Contractors

105 W. Monroe St., CHICAGO
85 E. Gay Street, COLUMBUS, O.

B. Russell Shaw Co.

INCORPORATED

Consulting and Designing Engineers AIRPORTS - AIRLINES Areade Bldg. ST. LOUIS, MO.

L. Alfred Jenny

Consulting Engineer

Air Ports, Railroad and Marine Ter-minals. Steam and Electric Rail-roads. Rates, Economics, Valuations, Litigations. DUMONT, N. J.

Airmap Corporation of America

Aerial Surveys and Maps Consultants and Engineers The AIRMAP—The Engineer's Aerial Map for City Planning. Water Supply Stullen. Zoning. Complete Aerial Tax Map Service 42 Flatbush Extension. BROOKLYN.N.Y.

Invicta Engineering Company

Research and Development Industrial Processes Mechanical Inventions Competent engineering service to plants without engineering departments and to individuals requiring such service. P. O. Box 2494 BIRMINGHAM, ALA.

Ira G. Hedrick, Inc. A. S. C. E.

Consulting Engineer

Designs, Supervision, Estimates, Bridges and Structural Work. HOT SPRINGS NAT'L PARK, ARK.

Wadleigh and Bailey

Consulting Mining Engineers Management, Investigation, Appraisal of Mining Properties, Fuel Consultants, Natural Resource Fuel Consultants, Natural Resource Surveys. One Broadway, NEW YORK, N. Y. Southern Bldq., WASHINGTON, D. C.

Charlton & Davis

Civil Engineers

General Engineering Practice Local Maps for Sale FORT LAUDERDALE, FLA.

Charles H. Ruggles, Inc.

Consulting Engineers

RUGGLES TIMBER CRIB GRAVITY TYPE SEAWALL WEST PALM BEACH, FLORIDA

Elroy G. Smith

Consulting and Designing Civil-Hydraulic Engineer Industrial Hydro-Electric Development a Specialty 313-313-A Herald Bldg... AUGUSTA, GA.

Consoer, Older & Quinlan, Inc.

Meins. A. S. C. E. Consulting Engineers

Water Supply — Sew rage — Industrial Engineering 317 N. 11th St. ST. LOUIS. MO. 205 W. Wacker Drive, CHICAGO, ILL.

Harza Engineering Co.

Consulting Engineers

Dams. Hydraulic, Hydro-Electric, ood Control, and Sanitary Projects. 20 N. Wacker Drive, CHICAGO

J. E. Greiner & Company

Consulting Engineers
Design, Construction, Investigation, Advisory Service—Bridges, Docks, Piers,
Warehouses and other Engineering 1201 St. Paul St. BALTIMORE, MD.

H. K. Barrows, M. Am. Soc. C. E.

Consulting Hydraulic Engineer
Hydro-Electric Plants — plans, reports,
supervision and advice. Water supply and hydraulic problems.

6 Beacon Street BOSTON

C. A. P. Turner

Consulting Engineer M. Am. Soc. C. E. Reinforced Concrete and Structural Steel Bridges, Buildings, and Manufactur.ng Plants. 300 Builders Exchange Bidg.. MINNEAPOLIS. MINN.

Wa'ter H. Whee!er

M.A.S.C.E. and M.R. Engineera

Mfg. Plants, Buildings, Bridges, Dams, 1000 Met. Life Bldg., MINNEAPOLIS, MINN.

Arthur L. Mullergren

Consulting Engineer POWER SPECIALIST

770 Board of Trade Building
KANSAS CITY, MO.

Widmer Engineering Co.

Industrial Engineers

ST. LOUIS. MO.

Hugh L. Cooper & Co.

General Hydraulic Engineering Including the Design, Financing, Construction and Management of Hydro-Electric Power Plants. NEW YORK

101 Park Avenue.

Charles H. Herty

Industrial Consultant Special attention given to the location and d velopment of industries utilizing the natural resources of Southern States, especially as affected by Chemistry.

101 Park Avenue, NEW YORK CITY

William S. Lee

Mem. Am. Soc. C. E.; Mem. Am. Soc. M. E.; Mem. Eng. Inst. Can.; Fellow Am. Inst. E. E.

Consulting Engineer
535 Fifth Ave. NEW YORK CITY

CHARLOTTE, NORTH CAROLINA

MacElwee & Crandall, Inc.

Industrial and Civil Engineers
Investigations, Reports, Design, Supervision-Port Development, Piers, Terminals, Airports, City Planning, Water Front, Reclamation, Industrial Surveys
Main Office:
134 Main Street 11 West 42d Street
CAMBRIDGE, MASS, NEW YORK CITY

Ophuls & Hill, Inc.

Consulting Engineers

Steam and Electric Generating Plants Industrial Installations Ice Making and Refrigeration 112 West 42nd St., NEW YORK CITY

Howerton Engineering Co.

Consulting and Contracting Eng MUNICIPAL IMPROVEMENTS HIGHWAY IMPROVEMENTS Water Works, Sewer, Hard Surface Streets, Highways, Contracting Con-struction. ASHEVILLE, N. C.

Gilbert C. White Co.

Consulting Engineers Sewerage Paving Waterworks

CHARLOTTE, N. C. DURHAM, N. C.

William M. Piatt E. E. M. S.

Civil, Hydraulic and Electrical Engineer
Assistant Engineers
P. D. Davis
W. B. Gallagher, Ju. H. P. Redding
G. A. Harris
D. M. Williams
DURHAM, N. C.

Walter P. Christian

Electrical Engineer Electrical Quantity Surveys 1703 W. Lee St., GREENSBORO, N. C.

Morris Knowles, Inc.

Specializing in Municipal Engineering and Public Utilities, Real Estate Developments and Town Planning. PITTSBURGH CLEVELAND

Fuller & McClintock

Engineers

170 Broadway, NEW YORK
Penna. Bldg., 15th and Chestnut Sts.,
PHILADELPHIA, PA. Walsix Bidg., 600 Walnut St., KANSAS CITY, MO.

John McCrady Co.

Consulting Engineers

Peoples' Office Building

CHARLESTON, S. C.

W. E. Biggs Engineering Co.

Consulting Engineers

Consulting Engineers

Power Plants and Industrial power applications. Economic use of power and process steam.

Heating and Ventilating

Design—Supervision—Operation

Holston Bank Bldg...

KNOXVILLE. TENN.

Gardner & Howe

Structural Engineers Steel and Reinforced Concrete Buildings, Bridges and Viaducts

Freeland, Roberts & Co.

Consulting Engineers

Concrete and Steel Structures NASHVILLE, TENN.

C. N. Harrub Engineering Co.

Member Am. Soc. C. E.

Civil and Sanitary Engineers

Water Supply, Sewerage, Paving and
Structural Improvements. 705-9 Fourth & First Nat'l. Bk. Bldg. NASHVILLE, TENN.

Engineering Service Corp.

Consulting Engineers
Civil-Electrical-Mechanical-Refrigeration
Cold and Dry Storage Warehouse
Designs
Reports—Appraisals—Designs—Surveys
Docks and Harior Designs—Ind. Engr.
Water Sup. Sewer Sys. Oil and Gas Lines
HOUSTON. TEXAS. U. S. A.

The Terrell Bartlett Engrs., Inc.

Municipal—Structural—Industrial Reports—Appraisals—Designs Smith Young Tower

SAN ANTONIO, TEXAS

J. R. Pennington

Consulting Engineer

Specialist in Underground water, rveys, investigations and development. CARSON CITY, NEVADA

Lee H. Williamson

MEM. AM. SOC. C. E. Consulting Engineer CHARLOTTESVILLE, VA.

A'gernon B'air

Contractor

MONTGOMERY, ALA.

George B. Hills Co.

Drainage, Docks and Terminals Suite 314 Liggett Bldg.

JACKSONVILLE, FLA.

1930

C.

ap-

IN.

gs.

N.

ig. N.

gr. nes A.

c.

18

DIRECTORY

ARCHITECTS ENGINEERS CHEMICAL ENGINEERS ACCOUNTANTS

GEOLOGISTS CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

Seaboard & Southern Construction Co.

INCORPORATED General Contractors 216 Hildebrandt Bldg. JACKSONVILLE, FLA.

Hornbuck'e Contracting Co.

Municipal Improvements Industrial Village Utilities

ATLANTA, GA.

S. P. Rees

Contracting Engineer

Municipal—Industrial—Swimming Pool Gravity and Pressure Filter and Softening Plants

137 Muntington Road ATLANTA, GA

S. E. Huey

Consulting Engineer Natural Gas Ouachita Bank Bldg. MONROE, LA.

Established 1893 Kansas City Bridge Co.

Builders of Railroad and Highway Bridges River Improvement Work General Office, 1012 Baltimore Ave., KANSAS CITY, MO.

T. C. Thompson and Bros.

Incorporated 1895 General Contractors and Builders BIRMINGHAM, ALA.

CHARLOTTE, N. C.

Angle-Blackford Company

General Contractors

GREENSBORO, N. C.

Fiske Carter Construction Co.

General Contractors

GREENVILLE, S. C. SPARTANBURG, S. C.

Lee A. Gridley Construction Co.

General Construction

CRANE SERVICE-FOUNDATIONS KNOXVILLE, TENN.

Steel & Lebby

JOHN A. STREL, JR.
THOS. D. LEBEY

Engineers and Constructors
The design and erection of concrete and
steel structures.

Holston Bank Building

KNOXVILLE, TENN.

Charles W. A'paugh & Sons

Hydraulic and Construction Engineers Dams a Specialty; Investigations, Estimates Free.

MANASSAS, VA.

Floyd Jennings & Co., Inc.

Plastering Contractors

132 Cain St., N. E., ATLANTA, GA.

P. L. Gomez & Company

Plastering Contractors

ATLANTA, GEORGIA

Walker Electrical Company

Electrical Contractors General Offices: ATLANTA, GA.

Sales Offices:
ATLANTA, GA. COLUMBUS, GA.
GREENSBORO, N. C.

Industrial Electrical Company

Contracting Electrical Engineers

SAVANNAH, GA.

Hoosier Engineering Co.

Erectors of Transmission Lines and Substations

100 W. Monroe St. CHICAGO, ILL.

John Eichleay, Jr. Co.

Steel Construction Structural Steel House Raising and Moving Shoring and Foundation Work South 20th & Wharton Sts.
PITTSBURGH, PA,

J. B. Converse & Co., Inc.

Engineers

Industrial Investigations, reports, plans, estimates, supervision.

MOBILE ALABAM

E. T. Le Baron, C. P. A.

Member Florida Institute of Accountants Admitted to practice before the Treasury Department
Audits. Systems. Taxes. JACKSONVILLE

The Picard Laboratories

Chemists and Inspecting Engineers
Inspection of Cast Iron Pipe, Structural
Steel, Cement, Rallroad Equipment, etc.
Chemical Analysis of all kinds.
Representation in all Principal Cities
Clark Building, BIRMINGHAM, ALA.

Conard & Buzby

CONARD J. S. BUZB:

W. R. COMARD

Inspection and Tests of Materials of
Engineering and Construction
Reports, Designs, Supervision
Construction

BURLINGTON, N. J.

Wiley & Company, Inc.

Analytical and Consulting Chemists— Experts on Fertilizer Materials, Coal, Greases, Food, Drugs, Dairy Products, Chemical and Bacteriological Examinations of Water for Domestic and Manufacturing Processes. Calvert and Read Sts. BALTO., MD.

Dow & Smith

A. W. Dow, Ph.B.: F. P. Smith, Ph.B. Mem. Am. Inst. Ch. Engrs. Mem. Am. Soc. Civ. Engrs. Chemical Engineers, Consulting Paving Engineers, Asphalts, Bltumens, Cement, Paving Materials

131 East 23d St. NEW YORK

Stillman & Van Siclen, Inc.

Chemists and Chemical Engineers
Analysis and Inspection of Asphalt,
Paving Materials, Cement, Concrete
Building Materials. NEW YORK 227 Front Street PEEkman 5261

B. Stanley Simmons, Inc. and Associates

Architects

PUBLIC AND COMMERCIAL BUILDINGS 1315 H Street, N. W. WASHINGTON, D. C. NEW YORK OFFICE: Fifth Ave. at 47th Street

Tilghman Moyer Company

Bank Architects and Builders

ALLENTOWN

PENNSYLVANIA

The J. B. McCrary Company

Engineers

ATLANTA

GEORGIA MUNICIPAL IMPROVEMENTS

We design and construct Water-Works, Electric-light and Sewer Systems-Paving and Road Work.

Wiedeman and Singleton, Inc. (Successors to Paul H.

Consulting Engineers

WATER WORKS, SEWERS, SEWAGE DISPOSAL
APPRAISALS, VALUATIONS, REPORTS
ATLANTA, GA.

Byllesby Engineering & Management Corporation

231 S. La Salle Street

CHICAGO

NEW YORK

SAN FRANCISCO

Sanderson & Porter

Engineers

PUBLIC UTILITIES AND INDUSTRIALS

DESIGN

NEW YORK

CONSTRUCTION MANAGEMENT SAN FRANCISCO

James W. Billingsley

Consulting Engineers

Investigations—Plans—Specifications and Supervision

Industrial Plants—Docks —Seawalls—Roads— Bridges and Municipal Work.

NEW ORLEANS, I.A.

Spoon & Lewis

Fay, Spofford & Thorndike

Consulting Engineers

Water Works. Sewerage Works. Streets. Bridges. Industrial Plants.
Highways. City and Land Development. Port Development. Harbor Works.
Investigations—Designs—Supervision of Construction

GREENSBORO, N. C.

BOSTON, MASS.

Scofield Engineering Company

Consulting Engineers

POWER AND INDUSTRIAL PLANTS AND PROCESSES.

Design-Construction-Valuations. Commercial Trust Bldg.,

PHILADELPHIA

J. E. Sirrine & Company

Engineers

Factory Design: Hydro- and Steam-Electric Plants: Warehouses, Steam Utilization, Sewage Systems, Appraisals, Valuations, Reports. General Offices: GREENVILLE, SOUTH CAROLINA

Barrow-Agee Laboratories, Inc. | Charleston Constructors, Inc.

Chemists and Engineers
Analysis tests and inspection of all building and construction materials. JACKSON, MISS. SHREVEPORT, LA.

DIAGRAPH CONSTRUCTION MARKETAINS.

C. M. Trott, Engineer

58 Broad Street
Phone 3462 CHARLESTON, S. C.

H. C. Cheves, Jr., President
 J. A. McCormack, Secy. & Treas.
 C. M. Trott, Engineer

Floyd & Lochridge

Consulting Engineers

Hydraulie Investigations, Water Supply, Irrigation, Flood Control, Drainage Dams, and Power Development.

Investigations for Financial Institutions.

Hardaway Contracting Company

Engineers

Contractors

Water Power Developments, Bridges

COLUMBUS. GEORGIA

Cornell-Young Company

General Contractors

Railroads and Highways, Reinforced Concrete and Steam Shovel Work. 704 Georgia Casualty Bldg. MACON, GEORGIA



Lockwood Greene Engineers, Inc.

Plans-Specifications-Reports-Appraisals-for Industrial Plants

NEW YORK

BOSTON CHARLOTTE

SPARTANBURG CLEVELAND

Ford, Bacon & Pavis

3ncorporated

Engineers

Philadelphia

39 Broadway, New York

Battey & Kipp

Incorporated

Consulting and Constructing Engineers Industrial Plants
Railroad Shops. Terminals and Electrification

The J. G. White Engineering Corporation

Engineers—Constructors

43 Exchange Place

NEW YORK

Frederick Snare Corporation

Contracting Engineers

Difficult Foundations and Engineering Problems a Specialty

114 Liberty Street

New York

PHILADELPHIA

HAVANA

Kaustine Company, Inc.

Sanitation Engineers

Manufacturers of Private Sewage Disposal Plants, Enameled Iron Septic Tanks, Chemical Tollets, Consulting and Designing

PERRY, N. Y.

Dolbeer Building

Mees & Mees, Inc.

Engineers and Industrial Architects

Reports, Designs, Supervision of Construction. Appraisals, DAMS—POWER PLANT—MUNICIPAL IMPROVEMENTS

INDUSTRIAL PLANTS

616 Johnston Building

CHARLOTTE, N. C.

Tucker & Laxton

Contracting Engineers

Filters, Concrete Work, Hydro-Electric and Steam Electric Construction. CHARLOTTE, NORTH CAROLINA

Webb Electric Company

Electrical Contractors

Industrial, Commercial and Institutional Electrical Installations.

ANDERSON. S. C.

Allen J. Saville, Inc.

ENGINEERING AND CONSTRUCTION

Electric Building

RICHMOND, VIRGINIA

Wiley & Wilson

Consulting Engineers CORRULING ENGINEERS

PLANS, SPECIFICATIONS AND SUPERVISIONS
STEAM AND ELECTRIC POWER PLANTS
STEAM HEATING AND VENTILATING SYSTEMS
Complete Mechanical and Electrical Equipment for Public and Private Buildings and for Institutional Groups.

MAIN OFFICE: LYNCHBURG, VA. BRANCH OFFICE: RICHMOND, VA.

Robert W. Hunt Company

ENGINEERS

Inspection-Tests-Consultation 22nd FLOOR INSURANCE EXCHANGE, CHICAGO Laboratories and Offices in all Large Cities

Walter H. Flood & Co.

Chemical Engineers

Plant and street inspection on all types of pavements. Reports, specifications, consultation.

932 E. 44th St., CHICAGO, IIJ.

321 Daniel Building JACKSON, MISS.

RESEARCH

Pittsburgh Testing Laboratory

ANALYSIS

INSPECTION

TESTING PITTSBURGH, PA.

Branch Offices in the Principal Cities

Froehling and Robertson, Inc. Inspection Engineers and Chemists

Inspection of Cement, Steel, Pipe, Timber, Brick, Tile
Design and control of Asphalt and Concrete Mixture.
Water Analysis a Specialty.
BALTIMORE NEW YORK B

RICHMOND

Southwestern Laboratories

Chemical and Testing Engineers

Inspection Steel and Coment for Bridges and Buildings. Crossoted Timber, Asphalt. Brick, Cast Iron Pipe, Railroad Equipment, Bituminous Pavement at Plant, Chemical Analyses, Etc. Representation at usual points of origin

Mott Core Drilling Company

Diamond Core Drill Contractors

We Test Coal, Clays, and Mineral Properties, Foundation Testing, Dams,
Bridges, Buildings, Wash Borings, Dry Samples.

MAIN OFFICE HUNTINGTON, W. VA. MAIN OFFICE

Courtenay De Kalb

Mining Engineer and Economic Geologist

Reports on Mineral Products
Design and Advice on Treatment Plants for Ores and Non-Metallic Products NEW YORK, N. Y.

Sprague & Henwood, Inc.

Core and Wash Borings

For Buildings, Bridges, Dams and all kinds of Minerals
Anywhere in the United States or Canada
SCRANTON, PENNA.

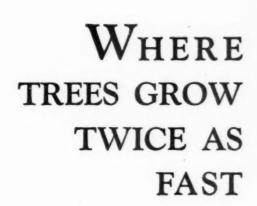
Main Office

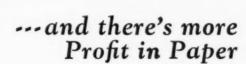


WE LOOK INTO THE EARTH By use of Diamond Core Drills

We test foundations for buildings, bridges and dams. We prospect coal and mineral lands in any part of North and South America.

PENNSYLVANIA DRILLING CO. 1812 West Carson St., Pittsburgh, Pa.
Drilling Contractors IF YOU WANT TO GET~ Southern Business Advertise in the MANUFACTURERS RECORD





Steady forest depletion in other sections has turned the eyes of the paper and pulp industry to Georgia. For in this state are great reserves of forest, waiting to supply a need which soon will be urgent.

Searching for wood, the industry has found many things more in Georgia. Plentiful cheap clay for filler. Efficient labor—willing, adaptable, with the natural skill which is the Anglo-Saxon's heritage. Low taxes. Abundant and dependable power. Natural gas and cheap coal. Equable climate. Swift transportation by road, rail, water and air. These and many more factors are a big plus to the standing timber.

And that timber grows twice as fast. It requires only half the acreage to supply a perpetual source of pulpwood,

and timber operations can be carried on throughout the year. Plants in Georgia can locate permanently and economically.

Paper is but one of the many industries to which Georgia brings great opportunity. We have made special surveys of Ceramics, Furniture, Rubber, Textiles and Full-fashioned Hosiery. We are rapidly completing others. And the information thus gathered is available to interested executives without charge or obligation.

If you are interested in better profits, write

INDUSTRIAL DEPARTMENT
New York office, 20 Pine street
Home office, Electric bldg.
Atlanta, Georgia

OPCI

POWER COMPANY

INDUSTRY PROSPERS IN GEORGIA

Alabama

is the largest producing state in the manufacture of cast iron pipe, making almost one-half of that made in the entire United States, with operations centering at Anniston and Birmingham.

Structural and ornamental iron and steel works, as well as stove and range foundries, have followed development of basic industries, locating, as a rule, near the source of supply. Rails, sheets, wire, rods, structural shapes and billets are among the principal products of the rolling mills.

This is an extract from a comprehensive survey of Alabama, made by the Alabama Industrial Development Board. Copies of this survey will be furnished responsible individuals upon request. Address: Alabama Industrial Development Board, Brown-Marx Building, Birmingham, Ala.

This advertisement published through the courtesy of the Alabama Power Company, whose New Industries Division is actively cooperating with the Alabama Industrial Development Board in finding profitable locations for new industries in Alabama.

Meeting the demand for facts on the

Resources, Advantages and Development of

The SOUTH

The 16 States from Maryland to Texas

The BLUE BOOK of SOUTHERN PROGRESS

An encyclopedia of information on the South. This standard, statistical and descriptive reference book gives detailed information on the progress, resources and current activities of the sixteen Southern states.



The growing demand for information on the South makes the Blue Book of constantly increasing value as a work of reference.

The contents of the Blue Book are continuously used as a basis for study in establishing new industries and in the expansion of established industries. It has a fixed place in the progress of Southern industry, agriculture and commerce.

INDISPENSABLE TO

Leading industries over the whole country and individual executives among them

Professional men

Commercial and business organizations

Railroads and railroad officials

Public utility operating and holding companies

Banks, trust companies and bond houses

Colleges and universities

Public libraries

Public officials in states, counties and municipalities

Individuals and corporations interested in the South from the standpoint of investments, locating of industries and the marketing of their products.

NOW READY FOR DISTRIBUTION

The BLUE BOOK of SOUTHERN PROGRESS

ONTAINS condensed facts and figures on the South's resources, progress and opportunities discussions of the labor situation that all students of business should read; a discussion of the leading industries, the textile situation, sugar growing and by - products manufacture, woodworking, paper making, fertilizer manufacturing, mining and minerals including gas and oil and ceramic industries, farm production, aviation progress and other features of the South's development A special section will be devoted to the South's power resources and expansion programs of public utilities, Southern construction work, building, highways, railroads and waterways and a review of foreign commerce through Southern ports.

RATES FOR COPIES

Single copies—50 cents postpaid; 500 or more—40 cents; 1,000 or more—30 cents, plus carrying charge Orders for less than 25 must be accompanied by check, money order or stamps to save bookkeeping account

GRASSELL

With Our Compliments

Accept this Helpful Booklet

Do You Use Any of these Chemicals in Your Business?

Acetate of Lead
Acetic Acid Commercial
Acetic Acid Glacial
Acetic Acid Pure
Acetic Anhydride
Acid Phosphate
Alum—Ammonia U.S.P.
Alum—Filter
Alum—Paper Makers
Alum—Pearl
Alum—Potash U.S.P.
Alumina, Sulphate of Commercial
and Iron Free
Aluminum Chloride Crystals
Aluminum Chloride Solution
Aqua Ammonia
Aqua Fortis
Arsenate of Lead Powder
Arsenate of Lead Powder
Arsenate of Lead Powder
Arsenic Acid
Barium Chloride
Barium Chloride
Bartery Zincs
Bi-Sulphate of Soda
Bi-Sulphate of Soda
Bi-Sulphate of Soda
Bi-Sulphite of Soda Solution
Bordeaux Mixture Powder
C. P. Ammonium Hydroxide
C. P. Nitric Acid
C. P. Nitric Acid
C. P. Sulphuric Acid
C. P. Sulphuric Acid
C. P. Sulphuric Acid
C. Adalyte
Cadmium
Cadmium Anodes
Cadmium Hydrate
Cadmium Anodes
Cadmium Arsenate Powder
Casein Spreader
Chronic Acid
Depilatory
Dry Colors
Dust Mixtures
Duclean—Iron drum cleaning
compound
DuGro (Grasselli Plant Food)
Electrolyte
Formic Acid
G. B. S. Soda
Gauber's Salt Anhydrous
Hypo-sulphite of Soda Crystals
Hypo-sulphite of Soda Crystals
Hypo-sulphite of Soda Pea Crystals
Iron Pyrites Ore

とななななななななない

Lactic Acid
Lime Sulphur Solution
Lithopone—
—Gold Seal Beckton White
—Grasselli White
—Linoleum White
—Becktone
—Duolith
Mixed Acid
Mossy Zinc
Muriate of Tin Crystals
Muriate of Tin Solution
Muriatic Acid
Nitric Acid Commercial
Nitric Acid Fuming
Nogas
Oil Emulsion
Oil of Vitriol
Oieum
Phosphate of Soda
Sal Ammoniac
Salt Cake
Sherardizing Zinc
Silicate of Soda Granulated
Silicate of Soda Granulated
Silicate of Soda Solid Glass
Silicate of Soda Solid Glass
Silicate of Soda Solid Glass
Silicate of Soda Solution
Snowflake Soldering Salts
Sodium Flux Crystals
Soldering Flux Crystals
Soldering Flux Crystals
Soldering Flux Solution
Slab Zinc
Strontium Nitrate
Sulphate of Soda Technical
Sulphide of Soda Technical
Sulphide of Soda Technical
Sulphide of Soda Flake
Sulphide of Soda Trincal
Sulphuric Acid
Summer Fruit Spray
Super Sulphate of Soda
Tinning Flux
Tri-Sodium Phosphate
Zinc Chloride Fused
Zinc Chloride Fused
Zinc Chloride Granulated
Zinc Chloride Granulated
Zinc Chloride Granulated

AND OTHERS

Whatever your requirements, just write, wire or phone our nearest office

GRASSELLI GRADE & Standard Held High for 91 Years

The Grasselli Chemical Co. 629 Euclid Ave., Cleveland, O.

Please send us without cost or obligation, your booklet, "Chemicals".

bookiet, Chemicais.

Firm

Address

City and State

charge account

STRUCTURAL STEEL CREATED THE SKYSCRAPER

IS THE SKYSCRAPER A MENACE?

THE SKYSCRAPER—a study of its economic height—by W. C. Clark and J. L. Kingston. 164 interesting pages of facts, charts, tables and drawings. *Published by the American Institute of Steel Construction*, New York. \$2.

Is the skyscraper an economic fallacy? A fire hazard? An assault on public health and safety? Shall it rise still higher or be banished from the face of the earth?

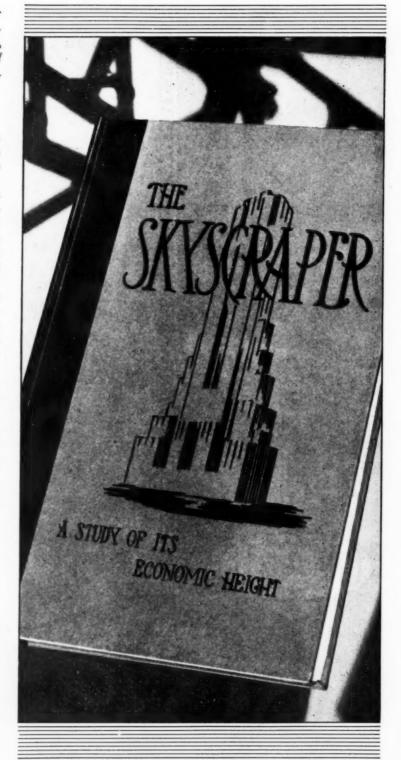
Into the raging controversy comes this clear, calm brief for the skyscraper. While admitting that the extremists are not all on one side, the authors recognize in the attacks of many antis "the eternal prejudice against 'the new'... which less than a century ago caused German doctors to protest against a railroad on the ground of danger to the health not only of those who dared to ride on it, but also of those unfortunate citizens who could hardly escape injury to health from observing the trains racing along at 20 miles an hour."

Which side of the question are you on—and how far? Here's red meat for the antis as well as the pros and information so authoritative and comprehensive that no steel man, no architect, builder, executive or metropolitan realtor can afford to be without it.

Send check to the New York Office for your copy before edition is exhausted.



The co-operative non-profit service organization of the structural steel industry of North America. Through its extensive test and research program, the Institute aims to establish the full facts regarding steel in relation to every type of construction. The Institute's many publications, covering every phase of steel construction, are available on request. Please address all inquiries to 200 Madison Avenue, New York City. District offices in New York, Worcester, Philadelphia, Birmingham, Cleveland, Chicago, Milwaukee, St. Louis, Topeka, Dallas and San Francisco.



AMERICAN INSTITUTE OF STEEL CONSTRUCTION

STEEL INSURES STRENGTH AND SECURITY

TABLE OF CONTENTS

Baltimore, Md., May 8, 1930

EDITORIALS

Demonstrating Faith in the South	age
The Federal Farm Board	57
Constructive Advertising	58
The London Naval Treaty	59
Easier Methods of Financing Moderate Priced Homes a Pressing Need	59
Some Companies Have Been Using 13-Month Calendars for Many Years	60
Race for Supremacy on the Seven Seas Growing More Intense	60
NEWS and FEATURE ARTICLES	
\$441,000,000 Is Total of South's Development Program in April	61

\$441,000,000 Is Total of South's Development Program in April	61
\$10,000,000 Building Program in Dallas, Texas	62
Restoration of Business Stability Aim of Country's Leaders	63
Steam-Electric Generating Plant Completed in Oklahoma	65
America on the Seven Seas AgainBy Richard Woods Edmonds	66
Intelligent Diversity of Production-Part IBy Nathan W. Dougherty	68
Surface Water Disposal Through System of Drainage Wells By Morton Macartney	70
"Breather Roof" for Reducing Oil Evaporation	71
Diversified Manufacturing in the South	72
Miniatures of Southern Cities	73
\$2,000,000 Pipe Line Project in Kentucky and Indiana	76
Contract for 20 Miles of Railroad in Missouri	76
76-Mile Rail Line Authorized for Texas	76
Missouri-Kansas Company Orders 725 Miles Pipe for Gas Lines	76
\$15,000,000 for Gas Line Extensions in the Southeast	76
\$15,000,000 for South Carolina Roads	80

SPECIAL DEPARTMENTS

Construction, New Industries and Contracts, 21 Pages Beginning on Page 82

Letters From Our Readers	77	Trade Literature	98
Iron, Steel and Metal Market	78	Machinery, Equipment and Supplies Wanted	99
Highways and Motor Transport	80	Industrial News	101
New and Improved Equipment	81	Financial News	104
_			10

MANUFACTURERS RECORD

RICHARD H. EDMONDS, Editor

MAIN OFFICE Published Every Thursday Manufacturers Record Building, Commerce and Water Streets, Baltimore, Md.

by the

MANUFACTURERS RECORD PUBLISHING Co.

BRANCH OFFICES

Chicago—11 S. LaSalle St. New York—901 Singer Bldg.

Subscription Rates: \$6.50 a year (in advance); six months, \$3.50; three months, \$2.00 to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. For Canada add postage \$1.00 a year. For other foreign countries add postage \$3.50 a year.

PUBLISHERS DAILY CONSTBUCTION BULLETIN AND BLUE BOOK OF SOUTHERN PROGRESS Member A.B.C.

You Can Depend On

HERESTRIBES WIRE ROPE

because every wire that goes into it is first rigidly tested by us to make sure that it has every quality that hard work requires.

Made Only By

A. Leschen & Sons Rope Co.

5909 Kennerly Ave. ST. LOUIS

New York Denver

Chicago San Francisco





For Jointing Cast-Iron Water Mains Saves at Least 75%

Leadite Tested and Used for Over 30 Years Leadite Joints Improve with Age The Leadite Co., Land Title Bldg., Philadelphia, Pa.

ge our Full PageAd in 2nd issue each month

au/ki

From One Source

You can secure your entire steel requirements from Bethlehem — with the assurance that each item is as good and dependable as the facilities of a completely equipped organization with years of experience can make it.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis.

SECTIONAL STEEL BUILDINGS

Will Solve Your Problem

Manufactured by

BRADEN STEEL CORP. TULSA, OKLA.

BRANCH OFFICES

Braden Steel Corpn., 109 No. Race St., Dallas, Tex. Texas Steel Bldg. Co., Houston, Tex. A. H. McCreery, Arcade Bldg., St. Louis, Mo.



BRADEN Sectional Steel Buildings were developed to withstand the unusually rough usage in the oil fields. Portability of the highest type was, and is, a necessary feature. Naturally the best of materials are required and used. Standardization of units or parts, makes for low cost production and high grade accurate construction. Units of a wide range of sizes may be assembled to make any size building up to 120' 0" clear span wide, and as long as desired.



Manufacturers Record

Devoted to the Upbuilding of the Nation Through the Development of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCVII No. 19 Weekly

BALTIMORE, MAY 8, 1930

Single Copies, 20 Cents. \$6.50 a Year.

The Federal Farm Board

THE storm that broke about the Federal Farm Board last week in the annual conference of the Chamber of Commerce of the United States was just one more of the many squalls that have beset that stormy petrel of industry, commerce, agriculture, and politics ever since it was organized. In this case the Board was being assailed as socialistic, and accused of attempting to maintain false price levels through artificial control of supply and to destroy much private enterprise through substitution of government-controlled cooperative selling organizations.

Among manufacturers, cotton mill men have severely criticised the action of the Board in attempting to peg the price of cotton, thereby upsetting the customary market trend and causing loss through the hedging operations some mills engage in. In private conversation they have even gone so far as to say that the Board's present course will bring financial loss not only to the mills, but also to the cotton growers and the Farm Board.

In commerce, the wool merchants are almost ready to stage a Boston wool party that will go down in history alongside the same city's famous tea party; while the produce merchants are in an equally belligerent frame of mind. It is an outrage, they assert, that a man's money, taken from him through the taxing power of the government, can be used to set up a powerful Federal competitive agency to drive him out of business.

As for politicians, a good many of them find out which way their constituents aim, and then shoot at the same target, a practice which in this case has made that particular type of politician a merciless critic of the Board.

Even some of the farmers do not love the Farm Board. "You know yourself it was created for the purpose of piling up a surplus in the cities, so the city people can buy at their own price," writes one farmer. Much of the criticism of the Board has been tinged with the same distortion or misunderstanding of the facts that is so evident in that farmer's remark. And what an interpretation that is of the plan to stem the rush to the market of such non-perishables as cotton and grain, and dole them out through the year as consumers can use them!

Intemperate and unfair as much of the criticism has been, it must be noticed because it comes in such volume from influential sources and from widely scattered points that it is a force to be reckoned with.

Is the Board putting the government into business? It is, in exactly the same sense in which an ordinary commercial banker is in the manufacturing or the mercantile businesses he finances. Indubitably there is a connection between government and agriculture that did not exist before, at least in the same form. However, there is precedent for it. In exactly the same fashion the government, through the revolving fund of the Shipping Board, is in the shipping business as a banker, for through the Shipping Board the government lends money at low rates of interest to private corporations that build ships in American yards and operate them under the American flag.

If the government can thus act as banker for American ship owners, why can't it do the same thing for American farmers? As a matter of fact, it has done so, in a somewhat different fashion. When the Federal Land Banks were organized, the government bought stock in them in order to get them started; and the federal funds advanced in this fashion were loaned to farmers on mortgages. In this instance the government was a stockholder along with the general public in an enterprise designed to aid farmers, but at the same time to make a profit on the transaction. Much if not all the stock of the Federal Land Banks has been called in, the government retiring from the venture. In similar fashion it is designed for the government to retire from the present banking venture as rapidly as the cooperative associations become strong enough to operate without federal funds.

But the feature of the government's present banking venture that inflames so many business men is the fact that the taxes paid by middlemen are being used by the government to crush them. But on this point Chairman Legge says the Board is not trying to crush the middleman.

The nubbin of the matter lies in the fact, well-known but seldom put into print, that, speaking generally and allowing for certain individual exceptions, the best business brains of the country are not on the farms but in industry and commerce; and the more selfish middlemen are generally astute enough to

block effective farm cooperation unless it is guided and backed up by some powerful champion.

Is the Board attempting to establish false prices for farm products—to sell them for more than they are worth—as Great Britain did with rubber and Brazil with coffee?

Most emphatically Mr. Legge and other members of the Board have disclaimed any such intention or any actions that could be justly so interpreted. Their objective is a uniform price based on the statistical relation of supply and demand for the commodities under discussion, and every business man knows that the Board has warned farmers over and over again that if they over-produce this year it will be powerless to help them next fall. Criticism of the Board on this point has been so full of distortion of the facts that much of it can be explained only as ignorance of the Board's plans, utterances and actions, or as wilful and deliberate misrepresentation.

But there has been other criticism—sane, temperate and thoughtful; and after all the unjust abuse has been disposed of, the reasonable criticism stands firm and square. The whole plan has been declared to be uneconomic.

It has been said that regardless of what the Board says about curtailment, its actions for price stabilization encourage over-production; and at least as far as cotton is concerned, the charge seems to be borne out by the best available information on acreages being planted.

It is called chimerical to expect farmers to curtail, and the criticism is probably sound. It will be an astounding achievement if the Board should succeed where so many other efforts have failed.

In all the bitter criticism that has been fired at the Board, it has never yet been charged with weakness or cowardice. It has endeavored to stick faithfully to the letter and the spirit of the agricultural marketing act which gave it birth; it has fought valiantly in the face of all opposition. Its chairman has shown a ready wit and a fighting heart, and his board members have stood stoutly about him.

Franklyn Waltman, Jr., thus describes a sally Mr. Legge made against the Chamber of Commerce of the United States in its discussion last week of a resolution condemning the agricultural marketing act:

"Facing an audience virtually united in its hostility to his work, Alexander H. Legge, chairman of the Farm Board, threw caustic questions and retorts into the face of those who have been criticizing him. He chided the organization for its present hostility to the Farm Board, contending that its committee had recommended at some time or other everything that has been done,

"But Mr. Legge dryly added that 'too many of your members were for the principle of cooperation only so long as it didn't work." Following that thrust, he turned sharply on his audience, accusing them of 'indifference if, indeed, not of antagonism,' for the 'wretchedness and misery of 'those who are producing your food supplies.'

"Finally, departing from his prepared address, the Farm Board chairman, himself a man of many million dollars, challenged the wealthy men sitting in front of him to match him, 'dollar for dollar,' in the creation of a fund for the endowment of a 'National Agricultural Foundation,' an institution proposed by the chamber itself three years ago.

"As he paused to await the response to his challenge, a deep silence filled the room as heads and necks were screwed about to see who would accept the 'dollar-for-dollar' proposition. Finally, with a laugh, Mr. Legge suggested 'don't all speak at once.'

"'Where is my good friend, Bill Butterworth, my old competitor in the implement business?" Mr. Legge sang out, referring to William Butterworth, president of the Chamber of Commerce. 'Some of you fellows sitting back there can help me put this over. I think some of you should be interested who are staying home while I am down here doing what I can.'

"'Well,' Mr. Legge taunted his audience again as silence followed his remarks, 'perhaps some of you may not think it is a good proposition after all. Perhaps there is some justification for saying that you are rather antagonistic. However, if after thinking it over any of you have a conscience that is troubling you and want to talk about it further, I will be glad to discuss it with you.'"

Regardless of what may be thought of the wisdom or justice of the Board's policies, every man who loves a good fighter must admire the spirit in which the Board has met every attack with a counter assault at least as vigorous, and has stood uncompromising against all public criticism and all the powerful hidden political pressure to which it has been subjected.

Whether the agricultural marketing act is unfair is largely a matter of opinion, and opinion depends chiefly upon self-interest. Whether it has made grievous errors, time alone can tell with certainty but it is a safe guess that, being human, it has made a good many. That it has striven honestly, courageously and intensely to do a good job under its responsibilities and with the tools at hand, few will deny. Whether its errors and the temporary dislocation caused by sudden injection of a great new force into the situation will eventually be outweighed by the benefits cannot yet be determined. Early in its career we took the position that the Federal Farm Board was a gigantic experiment; that it appeared to have been conceived along sound lines and that it deserved a thorough trial. Certainly more than nine months' time is needed to determine its usefulness. Give the Farm Board a fair chance and let some constructive criticism be offered.

Constructive Advertising

A GOOD many Southern cotton mill men have felt the need for advertising to offset the false and malicious propaganda that has been circulated about cotton mill conditions in recent months, but the Hunter Manufacturing and Commission Company of New York, without waiting to get the financial support of the rest of the industry, has gone ahead and advertised actual conditions in the mills whose output it sells.

It is a well-known fact that the production of highgrade goods demands workers of a high type; operatives who take a pride in their work. Squalid surroundings do not produce workers with an appreciation of fine goods and a pride in their output. The advertising of the Hunter Company indirectly plays upon this fact, and does it in such a way as to avoid any reference to the misleading propaganda at which it is aimed. It merely sets up a few incontrovertible facts, and lets them do the talking. Thus, it publishes a picture of a broad, peaceful village street bordered

e

n

d

n-

)f

ıt

a.

1e

VS

id

h

le

by attractive cottages, with the caption—"A street of homes where mill operatives live (Altavista, Virginia)." Accompanying the picture is a reference to the quality of the goods made in the Altavista Cotton Mills.

Nobody can see that advertisement without getting an impression exactly the opposite of that conveyed by propaganda exaggerating the worst conditions to be found.

Such advertising benefits not only the company whose name is attached, but also the entire industrial South.

The London Naval Treaty

TOW that the President has submitted the London Naval Treaty to the Senate, discussions will center upon acceptance or rejection. As usual, many opinions will be expressed, but most of them will be worthless because founded on fragmentary knowledge of the facts involved. Every contract entered into between two parties, however simple, must be based on the best obtainable knowledge of all the factors. The larger the stakes involved, and the greater the number of contracting parties, the more complex and difficult become the problems of conflicting interests. We do not have to get into the realm of international treaties to encounter contracts requiring difficult and protracted negotiations, or agreements based on facts carefully kept secret from many people whose interests are vitally affected. Many a contract between corporations is drawn and executed without explanation being made to stockholders of the concerns involved.

In the intricate interplay of international relations, complications that would be caused by disclosure of all the facts necessitate the reliance of nations on the sincerity, wisdom and vision of their government officials

The Senate Committees on Foreign Relations and on Naval Affairs, both of which must pass upon the London Naval Treaty, are urged by the Navy League of the United States to secure much confidential data from the State and Navy Departments before attempting to reach any decision. The data referred to is of too confidential a nature to be considered in the open Senate, since that would mean giving it to the press. It must be discussed in the strict privacy of committee deliberations, and the treaty ratified or rejected on recommendation of those committees.

In a matter involving such large stakes and such intricate details, superficial consideration by the Senate Committees might well be disastrous. Decisions based on political ambitions or short-sighted expediency would entail a heavy cost on the world. A wise decision is well worth the patience of the Senate and the country at large. The public will do well to treat all dogmatic statements on the subject as being blind guesses disguised as fact; the Senate Committees should ignore all utterances designed to unduly hasten or confuse their deliberations. Nevertheless, the public has a right to the basic facts.

Easier Methods of Financing Moderate Priced Homes a Pressing Need

THROUGH several private organizations with nation-wide branches, plans for financing the building of moderate priced homes have been effected or are under consideration. Business leaders have turned their attention to this phase of the country's construction problem. It is estimated that 70 per cent of the total amount of construction during 1930 will go into remodeling and improvement of homes. Home building, however, so far in 1930 has shown a great decrease compared with normal expectations.

In a special statement to the Manufacturers Record, H. C. Berckes, secretary-manager of the Southern Pine Association, replying to a request concerning the attitude of that organization toward promoting building, expresses the belief that easier methods for financing moderate priced homes over long terms is the most pressing need of the construction industry. Not only is this true as to the present, but for the future. It is a problem deserving the best attention that can be given to it by manufacturers and distributors of building materials. Mr. Berckes outlines the situation thus:

"For many years the Southern Pine Association has devoted considerable time, effort and money to the upbuilding of homestead associations. We are now playing a very vital part in a plan to create easier financing methods and through the National Lumber Manufacturers Association are seeking to make funds more readily available for a moderate priced home.

"These systems of financing should be extended to remodeling and improvements on homes. The present owners of homes are among the best type of citizens and are already sold on the idea of home ownership; have reached a degree of stability through such ownership, and are most excellent prospects for the use of building materials if they can be given the means of improving their present homes. There is an incalculable amount of this type of work that is necessary if considered only in the light of a means of preserving the invested capital in the already existing homes."

Recently a trade promotion campaign in Texas was undertaken by the Association, and a preliminary plan to stimulate the remodeling and improvement of homes in Texas was adopted. The Texas Lumberman's Association is co-operating with the Southern Pine Association in the work, and P. A. Bloomer of the Louisiana Long Leaf Lumber Company, who presented the manufacturers' side of the co-operative movement, said:

"We have reached the stage where mills must be prepared to ship unusual bills. We must take care of the customer's inquiry and be prepared to ship him what he wants even though his order calls for unusual cutting."

Stress was laid particularly on the interest which building and loan associations and agricultural colleges would have in the campaign for home building and improvement work. Other states no doubt will be covered as the movement gets under way. There are literally hundreds of thousands of homes in the United States in need of remodeling and other extensive improvements. If home owners are assured of easier methods of financing, low rates and long time payments, the manufacturers and dealers in building materials will have some of their sales-distribution problems simplified.

Some Companies Have Been Using 13-Month Calendars For Many Years

THE movement to simplify the calendar has been gaining the increased attention of the business world lately. According to the Accounting and Auditing Organization of Ernst & Ernst, Washington, D. C., about 100 companies have been using the 13-month calendar, some for more than 30 years. While not attempting to argue for or against the 13-period calendar, Ernst & Ernst, in setting forth the merits claimed for it, express the belief that executives should examine the plan and observe the experience of those who use it. They point out that it might be adopted by any company for its own internal organization purposes without any revolutionary change in dealings with business units which operate under the present calendar.

The Southern Pine Association has been using the 13-month calendar system for assembling and compiling its statistics on production, stocks, and sales, giving an accurate comparison by weekly and monthly periods during the year and for past years.

Among the concerns cited by Ernst & Ernst as using the 13-month calendar are some of the largest corporations in the country, such as the Fuller Brush Co., Carter's Ink Co., Hotel New Yorker, Jewel Tea Co., Upson Co., Fiberloid Corp., Graton & Knight Manufacturing Co., Mutual Stores, Inc., R. R. Foerdered, Inc., Loews, Inc., Sears, Roebuck & Co., Eastman Kodak Co., Western Clock Co., and the Maytag Company.

Under the 13-month calendar, with each month of 28 days divided into four weeks of seven days each, there is not the difficulty of determining true trends in business progress which is met with in the present calendar of 12 months of 28, 29, 30 and 31 days. Not only the calendar days, but the working days in each month vary, making as much as 11 per cent difference between the length of February and a 31-day month. Because of holidays and Saturday half holidays, there may be a variation of 19 per cent in the number of working days in a month (from 21 to 25). This irregularity is cited as a serious defect in monthly reports and operating statements compiled in business.

Briefly, here are the advantages of the 13 period calendar as described by its users:

 It enables executives to control their business more closely, for past performances can be measured more accurately.

 More accurate comparative cost and production records can be compiled without adjustments and can be checked at unvarying intervals.

Payroll difficulties caused by five payrolls in some months and four in others are avoided with considerable saving, since all periods have the same number of pay days.

4. Budget estimates can be made more accurately because of the ease in handling both weekly and monthly items without adjustments. The elimination of adjustments results in a saving of clerical work.

5. Sales campaigns can be planned more efficiently.

Different ways of arranging the 13-period calendar

are observed. It may begin on January 1 or January 2 of any year, regardless of the day of the week, or if it is desired to begin on Sunday, it may start on the Sunday preceding January 1, when the year does not begin on Sunday or it may begin when the company's fiscal year begins.

Thirteen-period calendars of 28-day months must take care of the extra day beyond 52 weeks in each year and the quadrennial leap day. Three ways of doing this have been successfully employed. Weekly Bulletin No. 255, issued by Ernst & Ernst, outlines the plan somewhat in detail.

Any consideration of the 13-month calendar for business use may be quite separate from the merits of the plan for general adoption or for adoption by the country through Federal legislation.

Race For Supremacy On The Seven Seas Growing More Intense

LSEWHERE in this number appears an article E on the development of our merchant marine as a result of the Jones-White merchant marine act of 1928. The extent to which that act is encouraging ship-building in this country is indicated by some figures recently published by the Department of Commerce. As of December 31, 1929, this country was fifth among the nations of the world in tonnage under construction. During the first quarter of this year it sprang into third place. Great Britain and Ireland still came first, having had under construction as of March 31, nearly 1,615,000 tons; Germany was second with about 231,000 tons, while the United States had under construction 222,974. While the United States now ranks a close second to Germany, the two of them combined fall far short of Great Britain and Ireland.

In June, 1914, the United States had under construction 147,000 tons of merchant shipping, or 75,000 tons less than at the close of March, while Great Britain and Ireland were 100,000 tons over today's figures. From December 1 to March 31 the increase in tonnage started in American yards was 43,000.

From the figures given by the Department of Commerce, several significant facts emerge.

First, while we come third in ships under construction, we are still building only about 13 or 14 per cent as much as Great Britain and Ireland are building; and we therefore have an enormous lead to overcome before we can assume anything like a dominant place on the ocean lanes of the world.

Second, although the seven seas are already heavily over-tonnaged, the race is between the swift, and new building of fast vessels proceeds with accelerating velocity.

Third, we have got to be prepared to scrap large tonnages of staunch, seaworthy vessels merely because they cannot compete with the faster ships of other flags. Competition among the merchant navies of the world is going to be more, and not less, severe.

\$441,000,000 is Total of South's Development Program During April

Expansion of Manufacturing and Power Facilities Feature of 137 Outstanding Industrial Projects

building projects proposed or let to contract in the 16 Southern states during April have a total valuation of more than \$441,000,000, according to a compilation by the Daily Construction BULLETIN published by the MANUFAC-TURERS RECORD. Thus it is demonstrated that the South is doing its part toward carrying out the suggestions of the Hoover conferences. Indications are that building and industrial activity in the section is steadily gaining momentum. The April total assumes added significance when it is considered that it comprises the investment for only 137 outstanding enterprises, no effort being made to estimate the total valuation represented by the more than 4500 separate items reported during the month.

A survey of industrial expansion activities in the South discloses that new enterprises are quite evenly distributed through the various states, and that a wide diversity of products will be turned out by new and enlarged plants. Not only are new plants being established by the so-called "big national interests," but manufacturers in many lines in the North and East are establishing factories in the South. Likewise, local interests are actively engaged in expanding established manufactories and building new plants, financed by Southern capital.

Some Outstanding Projects

That conditions in the South favor industrial development is strikingly shown by the numerous programs of expansion now under way at comparatively new plants. For instance, the Du Pont interests have under way at their Old Hickory rayon plant near Nashville, Tenn., a virtually continuous expansion program. Last year a \$2,000,000 cellophane plant was completed there, and last month plans were announced for doubling its capacity. In 1929 the company erected two rayon plants in Virginia, one at Waynesboro, the other at Ampthill near Richmond, and late last month it made public the details of plans for erecting a \$2,000,000 unit to produce waterproof cellophane, on a site adjoining the latter plant. At Belle. W. Va., the Du Ponts are expending

AJOR industrial, engineering and millions of dollars in enlarging an ambuilding projects proposed or let monia and methanol plant.

The principal project let to contract last month was a \$20,000,000 addition for the huge ammonia plant of the Atmospheric Nitrogen Corp., Hopewell, Va., the first unit of which was completed last year at an estimated cost of \$35,000,000. It is said the development program now outlined for this plant calls for a total investment of more than \$125,000,000.

Another project on which work began in April was undertaken by the International Paper Co. It calls for the investment initially of \$10,000,000 for a kraft paper mill at Panama City, Fla., designed for a daily production of 200 tons and so laid out that it may readily be expanded to produce 400 tons each day. The company also announces work will begin immediately on a bag plant adjoining its \$5,000,000 paper plant at Mobile, Ala., placed in operation last year. When the construction program under way is completed late in 1930, the company will be in a position to produce daily 1000 tons of kraft paper in six plants located in Florida. Mississippi, Alabama, Arkansas and

The Tennessee Coal, Iron & Railroad Co., a United States Steel Corporation subsidiary, which has steadily expanded its plants in the Birmingham district, announced last month a program for further diversification of output calling for an investment of over \$9,000,000 in keeping with the demands of the South and indicated export markets.

Power Expansion

Central station electric power development is increasing along with manufacturing expansion. Power companies are determined to meet present and indicated needs. Many important projects have recently been let to contract and work is under way. To convey an idea of the assured big volume of work of this character, representative important projects regarding which announcements were made in April are briefly summarized here:

Dallas (Tex.) Power & Light Co. announced preliminary plans for investing \$8,580,000 in improvements; at Bagnell, Mo., the Union Electric Light & Power Co., St. Louis, pushed work on a hydroelectric project to cost more than \$20,000,000; Potomac Electric Power Co.,

Washington, awarded contracts for a \$2,500,000 power plant addition; Virginia Public Service Co., Charlottesville, started work on a \$3,000,000 hydro plant at Bremo Bluff, Va.; Kentucky-Tennessee Light & Power Co. will start work soon on a \$1,500,000 hydro unit at Bowling Green, Ky.; Byllesby interests started work on a \$1,000,000 transmission line at Louisville, Ky.; the Louisville Gas & Electric Co. and the Oklahoma Gas & Electric Co. operating in Kentucky, Oklahoma and Arkansas are pushing work on improvements costing more than \$14,000,000.

Natural Gas Development

Important new natural gas line projects are proposed. Contracts were awarded last month for several lines costing up to \$2,000,000 each. Large sums in the aggregate are being expended and will be spent in the near future for branch lines and extensions to serve territory adjacent to the several main lines built last year, from Texas and Louisiana fields to industrial centers in the West and Southeast. Also, this will necessitate in some instances the erection of additional compressor stations or enlarging existing compressing facilities to increase capacity of main lines. This movement was anticipated when the lines were originally built. It provides for natural gas service to numerous important steam-electric generating stations; important individual industrial plants; large consumers of fuel off the main lines, and service to numerous towns and cities, now either with artificial gas service or without such utilities. Building of these main lines and also branch lines promises further to aid in decentralization of industry and to speed development of natural resources in the sections traversed.

Major pipe line projects concerning which announcements were made last month include the following: Contract was let for a \$2,000,000 line from Maverick County, Texas, to the Del Rio plant of the Central Power & Light Co.: the Missouri-Kansas Pipe Line Co., Chicago, went forward with construction of a \$2,000,000 line from Kentucky fields to Indiana towns and cities: construction material contracts are to be awarded shortly for the longest line yet constructed, a 1000-mile project from Louisiana fields to Chicago and beyond. estimated to involve an expenditure of more than \$100,000,000 and to necessitate the use of 240,000 tons of pipe; big blocks of gas lands have been acquired in West Virginia fields in connection with a plan to serve such important industrial centers on the Atlantic Seaboard as Baltimore and Philadelphia, the contemplated expenditure totaling \$30,000,000; extensions of Southwestern lines to the far West have advanced beyond the preliminary stages.

Heavy Volume of Miscellaneous Engineering and Building Projects

Space limitations prevent summarization of the 137 major enterprises announced in April, but in addition to those mentioned a few others are here presented to show the extent and character of the projects. Included are: An \$8,000,000 freight terminal and passenger station at Fort Worth; \$3,000,000 office building in Oklahoma City; \$2,-500,000 telephone building in San Antonio; \$1,000,000 hotel in Harlingen, Texas; \$2,000,000 hotel at Mobile; \$2,-000,000 hospital for Baltimore; \$1,500,-000 office structure for Washington: \$1 .-000,000 medical arts building at Atlanta; \$1,250,000 cold storage project at Chattanooga; Union stations at Tulsa and Oklahoma City to cost \$4,000,000 and \$2,500,000 respectively; an \$8,000,000 hotel and parking garage at Baltimore; \$2,000,000 office building at Dallas; \$1,-500,000 for college buildings at Nashville; \$1,250,000 hotel for St. Petersburg; \$1,660,000 railroad tunnel at Allegheny, Va.; two office buildings costing \$3,000,000 for St. Louis.

Other important undertakings costing all the way from \$500,000 to \$7,000,000 included roads, bridges, railroad tunnels, drainage and irrigation projects, port facilities, business structures of all kinds, airplane plants, airports, and a diversity of construction and building enterprises of one kind and another. Establishment of these numerous and widely diversified enterprises offers unmistakable evidence that the South is entering an era of industrial development surpassing the record made in the past decade.

Crushed Granite Plant for Georgia

Camak, Ga.—Plans have been made by Weston and Brooker Co., Columbia, S. C., to build a large crushed granite plant here on the Georgia Railway, to be in operation by September 1. The plant will be among the largest in the South with facilities for preparing and grading crushed granite for highway construction, concrete structures and railway ballast. The company recently purchased quarries at Holton, Ga., and it is expected these will be developed when conditions warrant. It also owns other quarry property in Georgia and operates two large plants in South Caroline.

Fine Home Becomes Memphis Museum



The Pink Palace Museum has opened at Memphis, Tenn., as a public museum and little theatre building; it was originally planned by Clarence Saunders, chain store magnate, as his home and was partly finished by him in 1924 at a cost of more than \$500,000. Acquisition of the home and estate by a realty company when Saunders became involved in financial difficulties resulted later in its presentation to the city, together with a park and artificial lake adjoining, also parts of Cla-Le-Claire, the former Saunders estate, now known as the Chickasaw Gardens residential section.

\$10,000,000 DALLAS BUILD-ING PROGRAM

Big Volume of Work Insured for 18

Months

Dallas, Tex.-Without including many suburban projects, it is estimated that construction under way or contemplated in Dallas totals more than \$10,000,000 and will be sufficient to maintain an uninterrupted program for 18 months. Projects under way in the downtown business section represent an investment of \$3,575,000, while outlying projects of importance aggregate \$3,800,000. In addition, projects to be completed within 6 months involve \$2,800,000. These figures do not include small projects, such as dwellings, apartments, suburban stores and industrial plants. Jobs of major importance under way include a \$1,000,000 Dallas Power and Light building, for which site is being cleared; 5-story annex to Kirby Building for A. Harris Company; \$175,000 Y. M. C. A. Moorland branch; \$150,000 Haskell exchange of Southwestern Bell Telephone Co.; 5-story building for McKesson-Crowdus Drug Co.; \$1,300,000 Federal building; \$500,000 building for Volk Bros. Co.; \$500,000 building of Dreyfuss & Son; \$75,000 addition to Highland Park town hall.

Work will soon begin on a \$795,000 building for the Dallas Gas Co. Foundations are being constructed for the \$1,000,000 Republic Bank Building annex. A 31-story building will be erected by the J. W. Crowdus Realty Co., to cost \$1,250,000. The Y. M. C. A. program calls for two buildings other than the Moorland branch to cost more than \$1,000,000, contracts to be let this summer. A 22-story Tower Petroleum Building to be erected by McNeny & McNeny at a cost of \$1,500,000 is expected to be under way within 90 days.

Natural Gas Distribution Systems

Leeds, Ala.-The Alabama Natural Gas Corp., controlled by the Tri-Utilities Corp., New York, has awarded contract to the National Cast Iron Pipe Co., Birmingham, Ala., for seven miles of pipe for a distribution system, work to begin immediately. The Mississippi Natural Gas Corp., Birmingham, is building a distribution system at Starkville, Miss., and work will begin promptly on a distribution system at Carrollton, Ga., for the Georgia Natural Gas Corp. The two latter systems are to be completed before July 1. The new systems will be supplied by the Southern Natural Gas Corp., Birmingham, which recently completed a natural gas pipe line from the Monroe fields of Louisiana to Atlanta.

d

n

t

Restoration of Business Stability Aim of Country's Leaders

[Special Correspondence Manufacturers Record.]

Washington, May 3.

More than 2000 business and industrial executives, out of their intimate knowledge of all sections of the country, weighed and answered the question "What's ahead for business?" at the eighteenth annual meeting of the Chamber of Commerce of the United States, this week.

For the country as a whole, they found prospects bright. For the South in particular they found prospects more than proportionately brighter. Restoration of stability was the end they had in view, and the stability of the South, they felt, had been less disturbed than elsewhere and would be the more easily restored.

President Hoover, with his singular ability to epitomize in a paragraph a complex proposition, answered the question when he addressed the Chamber's annual banquet. He said:

"There is one certainty in the future of a people of the resources, intelligence and character of the people of the United States—that is, prosperity."

But lest the incautious may assume that nothing more than ballyhoo now is essential to a return to the normal level of industrial and business activity, he added:

"We are not yet entirely through the difficulties of our situation. We have need to maintain every agency and every force that we have placed in motion, until we are far along on the road to stable prosperity.

"He would be a rash man who would state that we can produce the economic millenium, but there is great assurance that America is finding herself upon the road to secure social satisfaction, with the preservation of private industry, initiative, and a full opportunity for the development of the individual."

Since the dominant attitude of speakers and delegates participating in the annual meeting was frankness, it is appropriate to emulate that example in summarizing the work of the annual meeting. Both the formal discussions and the more intimate exchanges of opinion among delegates as they met socially, disclosed:

- 1. That the United States, following the stock market debacle, escaped a devastating panic by the proverbial eye-lash.
- 2. That it escaped this panic is a tribute not to government ukase or legislative action but to the intelligent co-

operative efforts of executives in private

3. That current business and industrial activities not yet have reached the high levels which obtained throughout the greater part of 1929.

4. That business generally has improved since the first of the year.

5. That the rate of improvement is progressively more rapid, justifying the expectation that approximately normal conditions will prevail by mid-summer, and that the last half of the year will show substantial improvement over the first half.

6. That "political action" which takes no account of economic laws always has been and always will be a serious deterrent to the attainment of the material wellbeing of the Nation.

Perhaps the most significant "trend" in this annual meeting was the measure of satisfaction evinced by these business men, with the discovery that even in the face of threatened panic, they had been able to bring together their forces, appraise the danger, plan the defense of all business and therefore the protection of the entire population, and all on a voluntary basis. This fact leads to the conclusion that as unfortunate as it was, the stock market crash was not an unmixed evil. It forced business and industry to prove, what President Hoover always has maintained, that to a far greater degree than it realized it was master of its own destiny; that intelligent planning based on authoritative facts, could establish a greater measure of stability than has been experienced heretofore.

As a result of the depression there has been a convincing demonstration that cooperation between government and business and cooperation between the several elements in the business fabric actually gets results, and gets more satisfying results and gets them quicker than reliance in political action and legislative panaceas.

The old and the new attitude in this regard clearly was indicated by Julius H. Barnes when, as chairman of the National Business Survey Conference, he reported on the work of that body. In part he said:

"It is interesting, at this point, to compare the problem and the method of applying the remedies as compared with our previous experience in 1921.

"In 1921 the Conference then called was nine months after the crash; in 1929, it was within three weeks.

"In 1921 the Conference required a great deal of preliminary work; the 1929 Conference was ready to move with machinery and information and contact

already developed by the orderly every day service of American industry.

"In 1921 business men came to Washington to find out largely what the government was going to do; in 1929 they came to pledge what they themselves were going to do.

"In 1921 they came to Washington to deal with an emergency to tide over the winter, to plan effective schemes for relief; in 1929 the problem was largely one of how to keep business going, not how to set it again in motion.

"On this background the Business Conference Committee have worked steadily with two or three major objectives.

"First, to aid and stimulate all possible prudent construction and as well maintenance and repair work throughout all industry.

"Second, by accuracy of statement as to prevailing conditions to guide individual judgment and to reassure the commitments of the directors of industry and, in doing this, to avoid interpretations of optimism which, if discredited, would defeat the very encouragement they sought to extend.

"By these measures it was sought to keep unemployment at a minimum and by maintaining thus a buying power of the general public to keep the wheels moving in the manufacturing and distribution trades as well."

The measure of success attending these efforts now is a matter of history. The fear of panic has been dispelled, long since, by the facts of trade.

As for the grounds on which rests the optimistic view of the future, these were found principally in the facts in the construction field. Experts from the several elements in the construction industry presented convincing statistical evidence that building and construction activities have experienced substantial acceleration, that the current volume of these activities is larger than in the comparable period of last year, and that the total volume for the year 1930 is very likely to be larger than the total for 1929. Since scores of industries such as the cement and lumber industries, almost immediately reflect conditions in the building industry, building activities and public works are accepted as a reliable index of what may be expected in these related activities. The outlook. therefore, in this group is decidedly promising.

Fenton B. Turck, Jr., vice-president of the American Radiator & Standard Sanitary Corporation, stated that return to "normalcy" has almost arrived in the construction field. Dr. John M. Gries, chief of the Division of Public Construction, Department of Commerce, reported that federal, state and municipal contracts in this field during the first quarter this year had been 33 per cent more than in the corresponding quarter last year. It was admitted that residential building activities were somewhat below normal, but with mortgage money now available and material price levels attractive, this class of building is expected to show substantial improvement during the summer.

Inquiry among the delegates clearly revealed that the business men of the South have contributed more than their share to these constructive activities of the Chamber of Commerce. With courage and resourcefulness, they demonstrated their faith in the economic soundness of the South at the time of Even with the stock market crash. prices on cotton at a decidedly unfavorable level, the business and industrial executives of the South rode out the storm and kept the industrial ship off the rocks, so that today the South equals if it does not surpass in soundness, the other business areas of the Nation.

Farm Board Assailed

The high light of the annual meeting was the discussion of the Agricultural Marketing Act and the Federal Farm Board. The daily press, keen for something spectacular, made much of this discussion as a "fight" between the Chamber of Commerce and the Federal Farm Board, or, perhaps, the Hoover administration which sponsored the Agricultural Marketing Act. In the view of many it was a clash between the traditional adherence of American business to the rights of private initiative and enterprise, on the one hand, and the continuing clamor for a paternalistic interference in business by the government with the hope of artificially improving the economic condition of agriculture, on the other hand. The resolution which the Chamber finally passed after the subject had been freely debated, denounced the use of government money, raised through taxation of all the people, for the benefit of one class of private business.

In a formal address that opened the discussion of the Cooperative Marketing issue, Alexander Legge, former chief executive of the International Harvester Company and now chairman of the Federal Farm Board, complained that while the Chamber had investigated and talked a good deal it had "done nothing about it" when it came to constructive action for the relief of agriculture. He submitted that every major principle in the Agricultural Marketing Act had been endorsed by the Chamber of Commerce and he advised, "don't turn down this program, because it is your baby." Chairman Legge's indictment of the Chamber

is indicated in the following excerpt from his address:

"I am sure that most of you will agree that you know more about the agricultural situation and how to meet it than I do. A considerable percentage of your membership have made that quite clear, and perhaps the best answer I can make is the statement that if be true, and you really do know so much about it, that the situation pre-sents a very severe indictment of the organization which, having full information of the facts, has made so little effort to remedy the situation. Certainly none of you has seen any evidence of constructive action on the part of the Chamber of Commerce or the part of any of its affiliated organizations, with the doubtful exception of taking a referendum two years ago, looking to remedy for and permanent improvement in the situation, which, your own investigators had warned, required substantial assistance if not from you, then from the government.

"One might find much justification in the statement that your attitude generally has been one of indifference if indeed not of antagonism; that you regarded the farm problem like the poor as something 'we have with us always' and that you who are more fortunately situated, discussed it much along the same lines as the ladies are apt to refer to the household help question—something that had to be endured if one was to avoid having to do the work oneself."

Later on, Chairman Legee observed:

"The country generally and business men for the most part gave their approval of the Agricultural Marketing Act before it became a law. I am sorry to say that there has been considerable evidence the past several months that entirely too many of your members were for the principle of cooperation only so long as it didn't work."

Daniel A. Millett, banker and stockman from Denver, in his formal address made a careful study of the major features of the agricultural marketing policy and their relation to sound economics. The general opinion seemed to be that he had made the most formidable assault on what was considered the economic weaknesses of the cooperative program as administered by the Farm Board, yet made. He reviewed the major efforts that have been made throughout the world in recent years artificially to stimulate prices or to control production, showing that none of these had been successful. He submitted that every artificial interference with the play of the law of supply and demand leads to grief, and did not hesitate to say that "tariff interference shows distinct signs of failure." He submitted that the Farm Board policy of seeking acreage reductions by general action of the farmers, regardless of whether they were high cost or low cost producers was unsound and that the law of supply and demand forces the necessary reductions by eliminating marginal producers.

Another question in which inhered

an unusual interest, was that of the present government attitude toward the trade practice conferences held under approval of the Federal Trade Commission. An authoritative statement of the attitude of the Department of Justice was made by John Lord O'Brian, assistant attorney general, appearing before the conference of trade association executives.

"The Attorney General of the United States," Mr. O'Brian said, "is not and cannot be an arbiter in the field of economic interests. His powers and his duties relate solely to the enforcement of law. The Department of Justice is, therefore, interested only in the acts and conduct of individuals and corporations. The Federal Trade Commission is in a somewhat different case. While it has no jurisdiction to enforce the Sherman Anti-Trust Act it has jurisdiction to investigate unlawful practices and to enforce the provisions of the Clayton Act, in the exercise of its jurisdiction to deal with unfair practices the Commission has not confined its activities to investigations and prosecutions but in the desire to aid business has developed the practice of holding conferences. Out of this has come the Federal Trade Practice Conference which, started as an experiment, has now become recognized as a valuable institution. The Department of Justice has no hostility to the Federal Trade Practice Conference. On the contrary it approves these conferences and believes that within their legitimate field they afford valuable opportunity for education and for constructive progress in industry."

The conference on trade practice rules failed to bring out any evidence that the Federal Trade Commission has changed its attitude toward trade practice conferences and the rules produced by them. It is apparent that the Commission is drawing a finer line on the rules included in Group 1, which are rules against practices contrary to laws which the Commission may invoke in its efforts to enforce the rules. The Group II rules are of course, those which the Commission accepts only as an expression of the industry drafting them, and for the enforcement of which the industry alone is responsible.

It was the consensus of opinion that this annual meeting had been one of the most interesting in the history of the National Chamber. In the election of directors the Southern areas were recognized in the selection of William M. Wiley of Sharples, W. Va., for the third district, Oscar Wells of Birmingham, Ala., for the Fourth District; Charles W. Gold of Greensboro, N. C., as director for the insurance group, and Harry C. Abell of New Orleans, La., for the natural resources production group.

Steam-Electric Generating
Plant in Oklahoma

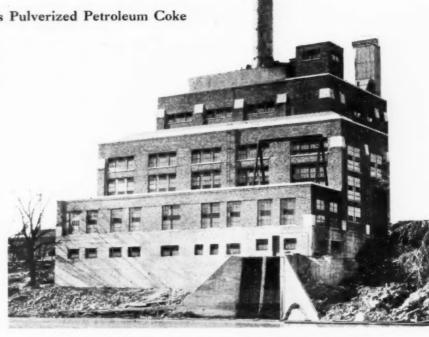
Unit on Arkansas River Burns Pulverized Petroleum Coke

The Lincoln Beerbower steam-electric generating plant of the Oklahoma Gas & Electric Co., located on the Arkansas River near White Eagle, Okla., was recently formally dedicated. The site was selected only after an intensive survey of the territory comprising the northern division of the company, the primary requisite being sufficient water for cooling purposes. The plant uses 23,000 gallons of water a minute in the operation of its steam driven turbine. Initial generating capacity of the station is 15,000 kilowatts, plans having been made for installation later of a duplicate unit. Construction began in March, 1929. The first boiler and turbine unit was placed in operation December 5, 1929, and the second boiler placed in service December 26, 1929.

Construction of the Lincoln Beerbower plant was necessary to meet the increased electric requirements of flour mills and other industries that have located in and around Enid. Completion of the station brings the total generating capacity of the Oklahoma Gas & Electric system to more than 158,000 kilowatts. A continued increase in capacity is seen, with completion September 15, 1930, of the 30,000-kilowatt steamelectric station under construction near Belle Isle Lake in Oklahoma City.

Besides being connected to the high line system which serves 43 cities and towns in the northern division of the company, the Beerbower station is tiedin to the company's network of transmission lines serving over 210 Oklahoma towns and cities.

Approximately 700 carloads of mate-



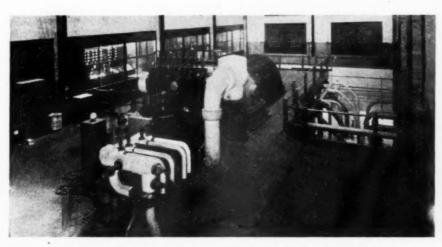
Lincoln Beerbower Station near White Eagle, Oklahoma.

rial and equipment were used in constructing this station. A complete machine shop, office, warehouse, water system and sub-station were constructed. A track two miles long connects this plant with the main lines of the Santa Fe and the Rock Island. Fuel used is pulverized coke, a by-product of petroleum, available in quantities at nearby refineries. Each boiler-room has equipment for pulverizing 8000 pounds of coke an hour. Petroleum coke, a refinery residue, has a higher heat value than coal and is preheated before being forced into the boiler. Six specially constructed railroad cars are owned and operated by the company for transport-

ing coke from the refinery to the station; little or no work is involved in unloading, as the cars are equipped with hopper bottoms. Flow of coke from track to boiler is all mechanical.

Electrical layout of the new station is a departure from the ordinary power station layout in Oklahoma. Practically all the high voltage switches and main busses are located in an outdoor substation. An underground duct line was provided for the main busses and control equipment from the power station to the outdoor sub-station. The substation enclosure covers an area of 600 feet square; a brick control room was built inside this area. Overhead lines will transmit energy at 66,000 volts to Morrison, Enid, to the Kansas Gas & Electric Co. and to the refineries. There is an overhead line to transmit current at 13,000 volts to Red Rock and the "101" Ranch.

An average of 200 men were employed during the course of construction. Work was under direction of F. S. Partridge, general superintendent of construction of the H. M. Byllesby Engineering & Management Corp., with F. J. Wirtz as field superintendent. Design and engineering was handled by the H. M. Byllesby Co., of Chicago under direction of H. W. Fuller, chief engineer. E. C. Thompson, assistant superintendent, was in charge of mechanical work. W. F. Palmer, Chicago, mechanical engineer, represented the engineering department.



Showing Turbine Room Floor with Turbine and Electrical Gallery.



The Liner "Malolo" of the Matson Line Is Greeted in Honolulu Harbor by Native Outrigger Canoes.

America on the Seven Seas Again

By RICHARD WOODS EDMONDS.

THE days when "all the lanes of Commerce were shaded by the flying canvas of American vessels" have passed, never to return, but it looks very much as if the chief feature of those days-the dominance of American ships in America's foreign trade-is to be restored. For while the American government is getting out of the shipping business as an owner and operator. it is going into it on an unprecedented scale as a banker. And as a banker with large loans running for 20 years and secured by mortgages on American ships, the United States Government will not lightly leave our vessels at the mercy of low cost, subsidized vessels of our European competitors. Once before Congress established mail contracts as a means of stimulating American shipping, only to abandon the policy as soon as a few citizens had invested money

on the strength of it. At that time, however, the government had no money in the business.

The Merchant Marine act of 1928 provides for a revolving fund of \$250,000,-000 to be lent to American citizens and American corporations at a very low rate of interest-the same rate at which the Government can borrow the money -to be used in construction of ships in American yards. The terms of the act stipulate that the borrowers may have 20 years in which to repay these loans. Consequently, from the time the first loan was made, the government was in the shipping business as a banker for a period of 20 years. As repayments on loans will constantly be replenishing the fund, the government can continue indefinitely lending; and even if our sentiment on a ship subsidy should change -which is highly improbable-it would be 20 years from the time of that change before the government could retire from its connection with private shipping and see all the debtor lines go broke without loss to itself.

No private banker would ever pull the props from under a venture in which he was heavily interested; and while the government does some strange things, it is not likely ever to do anything so obviously absurd as that.

But it is most improbable that our attitude on this subject will ever be reversed. On the contrary, it is more likely that the national demand for a great merchant marine will grow with the passing years. When we were no more than a narrow strip of colonies strung along the coast, with a vast, unsettled continent at our backs and all our business lay overseas, we were the dominant maritime power of the world.

When we turned our back on foreign trade and set to work on the gigantic task of developing the interior of the continent, we lost our interest in shipping.

The great interior, with no direct contact with shipping, saw a subsidy to ship owners as nothing more nor less than graft, for the enrichment of a few Easterners. That time has passed. Associations of business men in the very heart of the continent have demanded a strong merchant marine in order that the surplus products of the nation might be sold abroad. Farmers know that the grain, cotton and other crop surpluses must be exported, and evidently they realize that American ships will dispose of them to better advantage in foreign markets than will the ships of our competitors. The men who work in our automobile factories, in farm implement industries and a hundred others have



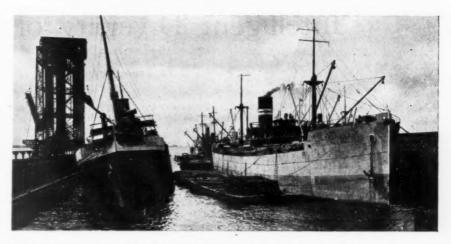
S. S. "Schoodic" of the Gulf River Plate Line, Loading Cargo of Flour at Galveston for Brazilian Ports.

learned that if their jobs are to be steady the surplus products of their labor must be sold abroad, and it seems evident that they have realized the value to American exporters of regular schedule service to all the markets of the world, and of shipping also in vessels owned by American firms and commanded by American captains who can and will serve as agents in the ports of destination, to bridge the gap between the shipper and the importer and, if not actually to take orders for goods, at least carry to the importer the impression that not only the exporter but the carrier also is interested in delivering the sort of goods he wants, in the condition in which he likes to receive them, and on the promised time schedule.

Having passed through our provincial stage and once more turned to the creation of a great merchant marine, we are going at it in a large and liberal fashion. The revolving fund of \$250,000,000, to be loaned to ship owners for new construction at the same rates at which the government borrows it from individual investors, is only one item. The mail contracts, which will provide payment to operators of American ships sufficient to equalize competitive costs, is another; and the provision for financing "fighting ships," where necessary in self defense, is a very effective third. "A fighting ship," in merchant marine parlance, is not a man of war. It is a cargo or passenger vessel, and its armament consists of ruinously low rates. A company with an ample reserve, or with many lines bringing in a profit, can afford to operate at a loss on one line until all weaker competition has been killed off. It will then, of course, raise its rates sufficiently to recoup all losses. Since our Jones-White act provides for meeting just such competition, it is no longer being used against us. Foreign shipping lines have recognized the formidable strength back of our new merchant marine.

However, another and very effective form of competition is being developed. Foreign buyers of American goods are specifying not only the line but the vessel and date of sailing on which their goods must be shipped; and vessels so designated are, of course, those of the nationality of the buyer. There is plenty of organized force back of this trend. Foreign exporters and importers must pass the shipping papers through their banks, and they are finding that when those papers do not specify shipment in a vessel of their own nationality, they are asked "why not."

There is no counterpart in this country to this form of competition, and it is costing American flag vessels much trade. American business men must realize that their greatest market is the mail contracts specify the speed tomorrow and 50 years from now."



Vessels Bunkering With Coal and Loading Lumber Alongside Frisco Docks at Pensacola, Fla. The Frisco Has Recently Completed Main Line Connection With This Port, Its Only Tidewater Terminal, and Plans to Handle Here 2,000,000 Tons of Freight Annually.

here at home; that the construction of American ships in American yards stimulates the home market, and that the building of more ships in this country depends upon the use of those already built. If our business men, therefore, who engage in foreign trade will follow the example of their foreign competitors and specify that all goods ordered by them must be shipped in American bottoms, while goods shipped by them must also go in American bottoms when they can get an even "break," they will actually build a larger home market for their products.

There is one great handicap still hanging over our ship lines. In spite of the fact that the seas are heavily over-tonnaged, and that sea-worthy vessels to the extent of hundreds of thousands of tons are still lying idle, we must build more ships, because most of our existing ones are outclassed in speed by the newer vessels of our competitors. Speed. speed and still more speed is as much the order on sea as it is on land. Our clipper ships of historic fame took the bulk of the world's commerce because of their greater speed; but today we are losing commerce we could and would carry if we could compete in speed with the ships of other nations.

The extent of the competition that we must meet from fast vessels built during the last five years is shown by the following tabulation of ship construction, made by Lloyds of England: During the five-year period from 1925 through 1929, the United States built 371 ships of 676,027 gross tons; Great Britain and Ireland built 2039 of 6.085,-451 gross tons, or about 9 times as much; France built 127 vessels of 404,-269 gross tons; Germany, 452 of 1,502,-037 tons; Italy, 144 of 593,280 tons and Japan 145 of 418,668 tons.

To meet this condition the terms of

required for certain routes, and since the adoption of the Jones-White merchant marine act in 1928, the 52 ships built, now building or to be built amount to \$235,000,000 in value. Mail contracts recently advertised call for construction of fast vessels worth \$150,000,000 of this amount.

Prior to the establishment of the United States Shipping Board, there were many important routes on which no American vessels operated, and where our ships did go, it was mainly as tramps, with no set schedule. But the development of foreign trade demands dependable trade routes, and the Shipping Board was given the job of establishing these to all the markets of the world. Millions of dollars went into the pioneering effort, some of them to pay for the errors that were inevitable where there was no previous experience to serve as a guide. Wherever those lines were established, foreign trade increased-sometimes increasing two- and three-fold. With the costly pioneering done at the expense of the nation, and the export business established for the profit of the nation, private companies with the mail contracts to meet the differential between foreign and American costs, are taking them over. Wallace H. White, chairman of the Merchant Marine Committee of the House, says that in 1929 our own vessels carried 40 per cent of our foreign trade, and that we shall not achieve our objective until more than 50 per cent of it is carried in American bottoms. Said Mr. White, "To protect our commerce against exorbitant and discriminatory charges, to insure a market throughout the world for the products of our farms and factories, to be prepared for the emergency of war among other nations-all these call for an American merchant marine today,

Intelligent Diversity of Production

In Two Parts-Part I

By Nathan W. Dougherty, Professor Civil Engineering, The University of Tennessee, Knoxville.

THE economic structure of today is much more complicated today THE economic structure of the world than was the universe as explained by Ptolemy. He placed a sphere within a sphere to explain the apparent motions of the sun, moon, planets and the stars. The economist of today must be more proficient in order to explain the many factors that affect production and distribution. So much has been said on the subject in the past that it may be futile to say more; still there is a principle constantly at work which has not received ample recognition. It is at the basis of production and distribution, yet no monuments have been erected to keep it before the minds of us all. For lack of a better name we will call it "The Principle of Intelligent Diversity of

It is obvious that all production cannot be confined to food, or clothing, or shelter, or a combination of these commodities; we can produce far more of each, or all of them, than the whole population can consume. Equally obvious is it that we cannot produce indiscriminately varying quantities of all the articles known in industry today. There must be a balance between production and consumption or there will be waste were confined to production primary needs—food, clothing ter. Indeed there are commodities. Indeed there are commodities of our principle in such a duction in these three essential that the production primary needs—food, clothing ter. Indeed there are commodities of our principle in such a duction in these three essential that the production primary needs—food, clothing ter. Indeed there are commodities to the world today where these of our principle in such a duction in these three essential that the production primary needs—food, clothing ter. Indeed there are commodities to the world today where the such as duction in these three essential that the production primary needs—food, clothing ter. Indeed there are commodities to the world today where the such as duction in these three essential that the production in the world today where the such as duction in these three essential that the production in the world today where the such as duction in the world today where the such as duction in these three essential that the world today where the world today wh

in the process. Some commodities will not find a market and other commodities will not meet the demand. Human wants are constantly changing with new discoveries and the application of new ideas to old commodities. The diversity principle would put a premium on new inventions to satisfy needs, as efficiency in production makes possible a surplus in the standard, useful, known commodities. Intelligent diversity would undertake to suit both commodity and quantity produced to the logical needs of the consumers. As the efficiency in old processes increased, new commodities would be introduced. satisfying new wants and giving an outlet for surplus energy not needed for the usual processes.

Production and consumption are constantly chasing each other up hills of prosperity and down valleys of depression. But the hills may be made less steep and the valleys less deep by applying fundamental rules that will cause them to run closer together, each one having due respect for the other.

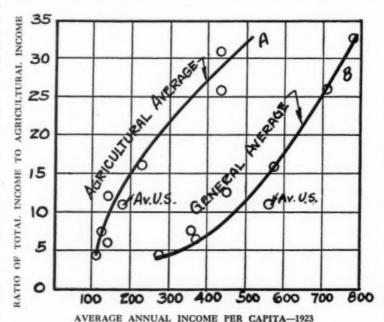
Time was when the principal occupation of any community was the production of food, and certainly the time is not far behind us when most of the efforts of a majority of the population were confined to production of the three primary needs—food, clothing and shelter. Indeed there are communities in the world today where these needs are but meagerly satisfied. The application of our principle in such a community would so divide the workers that production in these three essentials would be in proportion to the need for each commodity without over-production in one and scarcity in another.

As efficiency in production increases, more time is available for excess production, or time is available for no production, or time is available for the making of something new. Excess production is needless and makes wasteful competition. "No production" is useless, and causes the producer to degenerate, while new things are desirable and are the salvation of modern industry. Just as the farmer began to produce more food than the world could consume new industries were developed allowing a migration to the cities and the development of a thousand factories. The automobile industry is the outstanding illustration of the process. Thirty-odd years ago there were no motor vehicles on the road, today there are 26,000,000 on the American highways and more yet to come. The industry furnishes employment for 4,000,000 persons who would have had to seek employment elsewhere if this industry had not come into being.

The inventor who perfects a new device that all people can use has made it possible to spend otherwise leisure time in production of an article that will satisfy new desires. Let us name a few of these articles that have come on the market within the past 35 years: The

automobile, the talking machine, the automatic refrigerator, the washing machine, and the radio. These are the most common of modern devices that all families try to acquire. The economic salvation of this generation and the coming generation rests on the ability of inventors to produce new articles which will satisfy new desires. If this could be done intelligently and if production could be in proportion to needs we would have an effective application of the principle.

Formerly the farmer raised one crop in his field until its fertility was exhausted. His advisers told him to vary his crop and replenish the fertility and in a measure he has complied with the law of diversity of production. If his farm



Curve Λ shows the increase in agricultural average with the increase of total income to agricultural income.

Curve B shows the increase in average income with the increase in proportion of total income to agriculture.

In the groups of states east of the Rocky Mountains the agricultural income increases with the decrease in agriculture, and the average per capita income increases with the ratio of total income to agricultural income.

ro-

rohe

ro-

ml

SS,

te.

re

ist

re W a p-

IS-

rs

he he

to

y-

ld

re

ST.

6.

ne

III

ne

ne

ıg

ic

ıg

0.

n-

to

ic

n-

h

d

were large he would be producing many kinds of crops rather than one crop alone. His chances of a total failure by over-production in one article decrease with the diversity of his products. If one crop fails another may be in season. As a consequence he has had a more constant income than in former days of one crop production. His diversity has tended to level up the market value of his produce. Likewise, if a community diversifies its production there will be less chance of total depression than if all hands are turned to one commodity. In this, some Southern cities need to take stock of their dependence upon one industry.

In the whole country the production of automobiles, radios, talking machines and motion pictures has given employ-

ment to millions of people and has provided an income to purchase other marketable goods. The people have virtually exchanged these new wares for other new wares and the old wares which have been produced through all the centuries. More new and desirable inventions would increase diversity of production, giving labor to more hands and taking workmen from the fields. The local industry of the present day is an example of ability to produce over and above the ability of the world to consume. Were all the mines run at full capacity six days of the week the output of coal would be approximately doubled and there would be no marked increase in ability

The impression in an agricultural community is that manufacturing will

change the status of agriculture and that for the worse. The very opposite is In the accompanying curves, plotted between agricultural income and income of the people, it is shown that as the percentage of the people engaged in agriculture decreases the actual income of the farmer increases. In New England where manufacturing is predominant, the agricultural income is twice the income of the Southern farmer where agriculture is the dominant production. More industry in the South will increase the income of those who continue to farm. This law is true and cannot be changed by those who say laborers will be taken from the farm.

Part II. "A New Day in the South." will appear in a subsequent issue.

Polyhalite May Prove Important Domestic Source of Potash

become an important factor in the according to the United States Bureau of Mines. Deposits of this mineral have been found in Texas and New Mexico, in the course of the government drilling program, in quantities sufficient for profitable commercial development, provided fairly inexpensive chemical processes for extraction of the potash salts can be devised. Solution of this problem seems assured as the result of investigative work being conducted at the Nonmetallic Minerals Experiment Station of the Bureau of Mines, New Brunswick, N. J.

Polyhalite is a sulphate of potash, lime and magnesia. Pure polyhalite contains 15.6 per cent of K2O. Its physical properties are similar to those of a fine-grained, compact, pure limestone, although it is much more brittle. In color, polyhalité is usually deep brick red, but this varies through flesh pink to salmon pink and yellow. It also occurs as a pure white mineral.

Pot tests with alfalfa at the New Mexico College of Agriculture and Mechanic Arts have indicated that finely ground polyhalite is quite as efficient as commercial potassium sulphate. Further tests on a larger scale are in progress at various agricultural stations throughout the country working in cooperation with the Bureau of Mines. Should these tests confirm the opinion that all potash in crude polyhalite is available plant food, crude polyhalite would appear to have natural advantages over the more soluble potash salts under certain conditions. Its slow decomposition would

The mineral polyhalite promises to cause it to be retained in wet soils that require draining, and the potash growth of the American potash industry, applied to the soil in this form would not be removed rapidly by excessive rainfall during heavy prolonged storms.

A factor in the possible market for crude polyhalite is the well-recognized trend toward use of higher-grade and more concentrated fertilizers, a striking feature of the fertilizer trade at the present time.

Florida Had a Prosperous Season

Predictions made at the beginning of the Florida winter season that because of the stock market crash Florida would suffer from lack of winter visitors have failed to materialize. Reports from several points within the state would indicate that Florida has had one of the best seasons in its history.

Herbert M. Davidson, editor of the Daytona Beach News-Journal, informs the Manufacturers Record that "the season has been busier and more prosperous than that of a year ago," and he states:

"Generally, the season was held out longer, has been steadier in its growth, and has created greater stability for the city, according to merchants, hotel men, public utility managers, city officials and others who are in a position to gauge the progress of the season.

"Practically every hotel in the city was booked solid in February and March, the managers reported, and many of the season hotels have kept open later this year than in the past. Especially among the larger hotels was the 1930

season considered excellent, with a capacity business

"Public service companies, measuring closely the number of visitors in homes and apartments rather than hotels, re-port that the season was unusually steady, both in growth and in collec-tions, and was better than last year. More telephones were in use than ever before in Daytona Beach's history, even at the height of the 'boom' several years

The Boston News Bureau recently reported that more guests, more automobiles, and more spending than ever before was Miami's record during the past season, and said: "After a careful survey by the Chamber of Commerce there were found to be about 20 per cent more accommodations available in hotels and apartments than last year and the volume of business was approximately 18 per cent greater than in any previous year. Since one year ago about \$13,-500,000 worth of buildings have been completed in Miami and Miami Beach. and the contracts outstanding at the present time for new homes indicate that the building program this summer will amount well into the millions."

Increase Power Plant Capacity

Marfa, Tex.-The Central Power and Light Co., San Antonio, plans to install an additional engine of 840 horsepower at the Marfa plant, which serves also the communities of Alpine and Fort Davis. An addition to the building will be exected to accommodate the new engine, and probably other units later.

Barracks Bids Requested

San Antonio, Tex.-Bids will be opened May 23 by Capt. Will R. White, constructing quartermaster at Fort Sam Houston, to erect field artillery regimental barracks and two field artillery battalion barracks.

Surface Water Disposal Through System of Drainage Wells

About 100 Such Wells, From 160 to 1000 Feet Deep, Within Corporate Limits of Orlando

By Morton Macartney, City Engineer, Orlando, Fla.

Many methods have been developed communities, from an open ditch to complicated systems of underground pipe lines. In most cases, these ditches and pipe lines empty into the ocean directly or into streams leading to the ocean. Sometimes, as in the case of the city of N. w Orleans, the water has to be pumped up to higher levels and discharged into streams. In the central part of Florida, where many unique things are found, there is also a unique method of disposing of waste water by means of drainage wells.

Orlando, "City Beautiful," is located in the midst of a large number of lakes. 33 of these inside the city limits and scattered over a large flat saucer-like plateau approximately 100 feet above sea level. These lakes form smaller depressions in the larger surface, breaking up the flat contour of the earth and adding greatly to the beauty of the In times past, during entire locality.

rainy seasons, the lakes overflowed to such an extent that several merged into one large one. The water receded in several ways; there is a stream flowing in an easterly and northeasterly direction from a part of this district, eventually emptying into the St. John's River, thence to the Atlantic Ocean. This stream outlet relieves the district to some extent but a large part of the water on the surface is held by ridges from getting into this outlet and must seep into the soil, evaporate into the air, or pass through openings, commonly called sinks, to underground channels. To understand these so-called sinks. one must understand to a small extent the geology of the locality.

The Florida peninsula is supposed generally to be of coral formation, but as a matter of fact

it is a limestone, the same formation as of the United States. Above this lower formation is a second known locally as Ocala limestone. The upper layer is white and hard, the lower darker in color and usually softer except where flint layers, ridges or boulders are found. In early stages these limestone ridges actually protruded above the surface, in time making dry land in the form of islands, chains or clusters of islands. Ultimately, all these smaller bodies merged into what is now the Florida peninsula. Later erosion has altered the surfaces, until, in the vicinity of Orlando, though the terrain is flat, its surface is covered with lakes and dry depressions.

The foundation rock under the central part of Florida is largely calcium carbonate and is slightly soluble in water. If it is rain water, charged with acids and salts, warm and under some external pressure, it dissolves much more

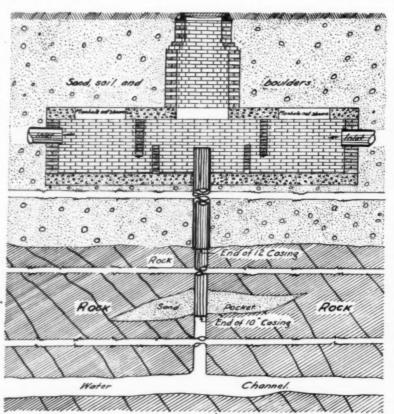
limerock. As the water sinks through for disposal of storm waters in urban that underlying the Southeastern part the upper lying layers of sand and soil, It reaches limerock, passes through some small fissure and as it goes dissolves some of the rock. The fissure grows larger, admitting more water and dissolving more rock, until the upper strata fall into the hole and what is called a sink comes into existence. Some of these sinks admit large streams and undoubtedly account for the large volume of water found in underground flows. The sinks often become clogged with falling rock and vegetable matter and sometimes cease to let water through. Underground, what may have been very small horizontal spaces filled with softer rock have admitted a little water, allowing the dissolving action to go on until large horizontal cavities and canals result. In a bulletin of the State Geological Survey the following statement is made:

> "The water of Silver Springs contains, as shown by analysis, 274 parts solids

per million parts water. Otherwise expressed. each million pounds of water is carrying with it 274 pounds of solids solution. Silver Springs is estimated to little more than 3,000,000 pounds of water per minute, 368,-913 gallons. terior of Florida is thus being carried into the through Springs at the rate of more than 340 pounds per minute, or about 600 tons per day."

Underground rivers leading to known springs such as Silver, Wekiwah, Rock, Suwannee, DeLeon and to unknown springs in river and lake bottoms and even in the ocean on the east and the gulf on the west have probably washed well - defined channels of more or less direct line from sources to outlets.

A chain of lakes in Orlando made up of "Lake of the Woods," Copeland, Lucerne, Cherokee and Davis had,



Showing Action of Drainage Well at Orlando Inner casing is used only when sand pocket is encountered.

finally discharging into a small stream going to what is known as "The Sink Hole" near Greenwood Cemetery. Up to 1904 this sink hole allowed overflow waters to pass into lower streams underground, taking care of surface drainage. In 1904 this sink became clogged and was partly opened by removing hyacinths and other vegetable matter but was still inadequate to take the water which came to it. The sink was dynamited in the hope of opening the hole but this too failed. A two-inch test well was drilled to see if a cavity underground could be tapped. The test being successful, four larger holes were drilled, from eight to twelve inches in diameter. These have, in large measure, cared for the water except in especially wet seasons. Since that time there have been about a hundred wells drilled within the city limits to which drainage lines have been connected. Many lakes are now overflowing into wells instead of flowing out into old original channels. Elevation of the lakes can be controlled by this means and this has facilitated landscaping of

These wells vary from six to twelve inches in diameter and have varying -capacities. In wells drilled in the past four years, a 12-inch hole is drilled to hard rock and cased with well tubing 12 inches in diameter, then continued through the rock until a satisfactory cavity or stream is reached. Often the drilling proceeds some distance when a cavity filled with sand is found and, in spite of constant bailing and cleaning, sand pours into the hole. A smaller casing is then put inside the larger and driven through the sand pocket into hard rock and the hole continued with a smaller diameter; a well is thus obtained with less capacity, but often adequate for the district. Sometimes more than one sand pocket requires three casings and an even smaller well results. Ordinarily a well is abandoned when it is concluded that a six-inch well only is available. A new location is tried, usually with better success.

In addition to size of the well, height of the water determines to a large extent its capacity and when such level is near the surface a well of considerably less

Water stands from seven to forty feet below the surface in the wells of Orlando. If the underground cavity is large, capacity will be large. Tests show 12 inch wells to have capacities of from 400 to 4000 gallons a minute. Drillers are now required to produce a well of 2500 gallons a minute to get pay for drilling. Wells of greater capacity seem to have a depth from 200 to 500 feet; some doing good work range from 160 feet to 1000 feet. There is, however, oration have also been placed on the only one well of such depth as the latter market in the past few years. Develop-

mine for it is in a battery of four others, seemingly interconnected by a common channel.

To protect wells from stoppage by debris several screening methods have been used, varying from an ordinary screen box placed on top of the casing to a large underground chamber filled with baffles and screens to trap and remove sand and other solids.

In addition to receiving surface drainage, such as lake overflows and storm water, certain wells are used for disposal of the effluent from the sanitary sewage treatment plants. Much experimental work has been carried on by local authorities and the State Board of Health to find some contamination to underground flows caused by this effluent, but to the present time none has been found. Springs in this vicinity have been tested at frequent intervals, also all known wells which draw water from deep sources. No contamination has been found in the vicinity of Orlando or where these tests have been made.

Maintenance cost of a system of water disposal made up of wells and short

in the past, outlets one to another, Davis here and its capacity is hard to deter-pipe lines is small. When surface lines can be carried to a lake and the lake level controlled by a well the maintenance is not large, as all silt, sand, debris, etc., lodges in the lakes and only clear water goes down the well. When storm sewer lines go directly into a well, a sand trap is used and maintenance cost consists largely in cleaning the box at regular intervals.

> In spite of constant cleaning, wells sometimes become stopped. Up to about a year ago it was customary to have a drilling machine open the well by bailing or drilling, but recently an air compressor, with a capacity of about 220 cubic feet a minute, has been used. This, with a submergence of 150 feet and pressure of 60 to 70 pounds, will pump 2000 gallons of water a minute. A 1-inch pipe with double elbows at the bottom, to send an air stream upward, is lowered to a depth of 150 feet. A volume of air sufficient to cause an upward flow of water equal to capacity of the well is forced down the pipe and the stream brings out all debris which may be stopping the flow. So far this has never failed to restore a well to its original capacity.

"Breather Roof" for Reducing Oil Evaporation

Much Accessory Equipment Now Required on Tank Farms

"breather roof" have been conducted in United States Bureau of Mines, in co-Comparison of methods and apparatus used in handling and storing crude oil and its products today with those in general use 10 years ago would show that an oil tank is no longer simply a container for holding liquid, but is now considered an important piece of equipment subject to constant inspection and care. The modern vapor-tight tank often requires as much care as a boiler or pump when one considers its various component parts such as vapor-tight gage hatches and thief hole covers, vacuum and pressure relief valves, swing line apparatus, vapor-recovery systems, insulation, cooling devices, and often automatic gaging devices. As an auxiliary to physical equipment of the tank itself the subject of paints and paint colors is given considerable attention.

Other types of tanks for reducing evap-

In the course of a general study of ment of the floating roof type was an the prevention of evaporation of crude innovation, directed toward reducing oil and gasoline, tests on an 80,000 bar- evaporation losses. A new type, known rel storage tank equipped with a as the diaphragm or "breather roof," practically eliminates movement of airthe Seminole area in Oklahoma by the vapor mixture from a storage tank filled with oil. It is an all-steel welded or operation with the state of Oklahoma, riveted roof which slopes downward from its outside circumference toward the center for a short distance and then is level to the center. It is of especial value for use on tanks in which oil is stored over long periods.

> Breathing of storage tanks is greatly reduced by the use of water sprays, insulation and other cooling devices, by light colored paints and by use of vacuum and pressure relief valves in various combinations of the foregoing methods.

> Average loss for a period of six months from four 55,000 barrel all steel tanks with welded roofs and low-pressure vent valves in the Seminole area was 0.7 per cent of the total volume stored, representing about 364 barrels per tank or 700 barrels per year.

> Further details regarding the evaporation tests are given in Report of Investigations 2984, issued by the Bureau

Diversified Manufacturing in the South

[From The Southern Field, issued by the Southern Railway System.]

Many well-informed people do not present pig iron production of about of electrical appliances and equipment fully appreciate the wide diversity 4,000,000 tons per year is practically all and pole-line hardware. of manufacturing at present carried on south of the Ohio and Potomac rivers and east of the Mississippi or the manifold opportunities for further industrial development in this territory.

Manufacturing in the South is often thought of in terms of textile mills, tobacco manufacturing and iron making.

More than three-quarters of all of the cotton consumed in the United States is manufactured in Southern mills.

The South produces nearly 90 per cent of the tobacco crop of the United States, manufactures 70,000,000,000 cigarettes per year, or three-quarters of all of those made in the United States, 1,500,000,000 cigars, and 220,000,000 pounds of other manufactures of tobacco.

Conditions for economical manufacturing of iron and steel are exceptionally favorable not only in the Birmingham district but in other Southern localities, and a great iron and steel industry has been built up.

These are three of the South's most important fields of manufacturing, but their history falls far short of telling the story of Southern industrial prog-

The same advantages of abundant and easily accessible raw materials, economical electrical power and cheap coal, accessibility to markets, adequate and efficient transportation, intelligent and adaptable labor, and climatic conditions favorable to indoor and outdoor work 12 months in the year, which have been the factors in the building up of the textile, tobacco and iron industries, have led to the development of a wide diversity of manufacturing throughout the Southern textile, tobacco and iron industries will continue to grow, but many of the most inviting present-day opportunities in the South are in other industrial lines.

One of the most important groups of Southern manufactures embraces the great variety of industries using forest products in whole or in part.

Iron has been made in the South ever since Colonial days, but the present iron and steel industry had its beginning about 1880. The total Southern production of pig iron in 1885 was 693,692 tons. Then, and for some time afterward, practically every pound of iron made in the South was shipped outside of the territory in the form of pig iron. Steel making was introduced and a great many industries using iron and steel as their raw materials were developed throughout the South with the result that the used in the territory.

The products of Southern iron and steel using industries range from steel ships, bridges, structural steel and rails, to tacks. Boilers, engines, machinery, implements and tools of many kinds. enameled bathtubs, other sanitary wares, and a great variety of miscellaneous iron and steel products are manufactured and distributed, not only throughout the United States, but also in foreign countries. These industries are constantly growing and their success points the way to further expansion in other lines.

The present market for cotton textile machinery is almost altogether in the South, but until recently no textile machinery of any kind was made in the territory. A plant manufacturing cotton looms is now in successful operation at Spartanburg, S. C., and another is in prospect. A partial line of woolen-mill machinery is now being made in Chattanooga. Several concerns in the South manufacture textile machinery attachments. One of the best industrial opportunities in the United States today is for a large plant in the South to make a complete line of textile machinery.

With the nation looking to the South for an increasing proportion of its forest products and with the rapid growth of wood-working industries in the territory, there is an excellent opportunity for a great expansion of the manufacture of wood-working machinery of all kinds, and especially the types of machinery used in making furniture.

Large quantities of glue and sandpaper are used by the furniture makers and other industries of the South.

Glue stock from Southern tanneries. and other sources, is available in sufficient quantities to form the basis of a large glue manufacturing industry.

Paper, abrasives and glue are the raw materials of sandpaper.

Existing paper manufacturers in the South are prepared to make the special grade of paper required as soon as there is any demand for it.

Rhodolite garnet and other abrasives are abundant in western North Carolina.

The making of glue, the production of abrasives, and the making of sandpaper are attractive opportunities which may well appeal to industrially minded men

The continuous increase in the production and use of electrical current in the South and the constant extension of transmission lines suggests opportunities for making dynamos, motors, all kinds

Highway improvement is going on rapidly in every Southern state and will be continued until every street and every important country road has been put in first-class condition. This suggests the opportunity for making every class of machinery and implements used in highway building and maintenace in the South, not only for Southern use, but for sale in other parts of the country.

Another opportunity for the South is the making of builders' hardware, furniture hardware and a complete line of shelf hardware. The Southern demand for these commodities is constantly increasing and they can be made in the South under such advantageous conditions that Southern manufacturers could compete in markets in other sections.

Almost every useful mineral clear through the list from asbestos to zircon is found in commercial quantities in territory served by Southern Railway System, offering opportunities for a tremendous expansion of metallurgical and chemical industries of all kinds. One of the most attractive fields is for a large expansion of the porcelain industry and every variety of ceramic manufacturing.

At present prices of linseed oil and oil cake a plant at one of the Southern ports to make linseed oil from imported flaxseed would quickly pay for itself. The annual consumption of linseed oil in the South is sufficient to take the output of a good-sized plant, and linseed oil, with the use of the lead and zinc products from Southern mines and the great variety of mineral pigments found in the territory, would afford an opportunity for a paint and color industry.

Three of the South's largest industries -textiles, cottonseed oil and tobaccoare based on the manufacturing of Southern farm products. Attractive opportunities exist for a great expansion in this Manufacturers of butter, condensed and powdered milk and cheese have found that milk can be produced in the South cheaper than in any other part of the United States. The result has been the recent location of several large plants profitable to their owners and affording a cash market for farmers.

Marketing fresh fruits and vegetables is a major source of income to the South, but in many lines of production there are surpluses which cannot advantageously be marketed fresh. Southern canning and preserving plants are uniformly successful and profitable, and there are attractive opportunities for this industry in every Southern state.

Miniatures of Southern Cities

Greensboro, North Carolina



Photo by the Wm. A. Roberts Film Co.

By W. B. VAUGHT, JR., Greensboro Chamber of Commerce.

GREENSBORO, a city of 59,585 people, has the largest denim mill and the largest overall manufacturing plant in the world. Products of other large plants here are terra cotta, silk hosiery, canton flannels, structural steel, and proprietary medicines.

Greensboro is the insurance center of the South.

The total of building construction for 1929 was \$3,133,865, of which \$2,693,443 was for new buildings. During 1930 construction will begin on a \$1,000,000 post office.

Monroe and West Monroe, Louisiana



By S. H. McClary, Chamber of Commerce.

 $M^{
m ONROE}$ and West Monroe have an estimated population of 30,000.

The Monroe gas field at the present time is furnishing natural gas to St. Louis, Memphis, Atlanta, New Orleans and many smaller communities. This field, classed as the world's largest, has a possible supply of about 20 billion cubic feet

per 24 hours. There are now 672 producing wells and others are being brought in at the rate of two or three each week.

The climate of this section is mild the year round, ideal for industrial operation, home surroundings and out-of-door activity. The soil is productive; and there are good gravel and paved roads.

A \$5,000,000 addition is being made at the Brown Paper Mill; upon completion this plant will, it is believed, be the largest kraft paper mill in the United States.

Building permits for the year totaled \$1,578,000. Bank clearings for 1929 amounted to \$143,000,000, as compared with \$124,000,000 in 1928.

Griffin, Georgia



By S. A. Spivey, Griffin & Spalding County Chamber of Commerce.

GRIFFIN—"The Turkish Towel Town"—is an important industrial and agricultural center located 40 miles south of Atlanta on the Central of Georgia Railroad, the Southern Railroad and the Dixie Highway. Griffin's population, including suburbs, is between 15,000 and 20,000. Although the center of a diversified agricultural region, the manufacturing enterprises number about 50.

The chief articles made are Turkish towels, staple cotton goods, hosiery, diaper cloth, infants hose, underwear, sweaters, buggies, optical goods, medicine, cotton seed products, building material, bottled drinks, canned pimento peppers, canned vegetables, ice, food products, etc.

Agricultural products of Spalding County (of which Griffin is the county seat) and the adjacent counties in Griffin's trade territory are cotton, corn, small grain, peaches, pimento peppers, vegetables, dairy products, poultry products, live stock, hogs, etc. Spalding County is world famous as a grower and canner of pimento peppers.

Griffin's latest notable achievement is construction of a water supply system with capacity of 4,000,000 gallons daily. Both city and county have recently voted large bond issues for purpose of supplementing existing public school facilities. All main roads have been paved some years.

An active regional Chamber of Commerce, of which G. J. Drake, president First National Bank, is president, and S. A. Spivey, secretary, is maintained.

St. Petersburg, Florida



By J. H. SINGLEHUBST, Chamber of Commerce.

POPULATION of St. Petersburg is 47,629, exclusive of the large number of tourists who visit the city in winter.

Inauguration of the new municipal airport was perhaps the most significant undertaking of 1929. This new development, which is in addition to three semi-private airports located in this vicinity, is situated on the waterfront and is suitable for seaplanes, airplanes or amphibians. A blimp hangar from which the Goodyear Zeppelin dirigible has conducted its winter operations is located at this field.

Building permits for 1929 total \$1,445,800.

The St. Petersburg labor community is preponderantly American, of English extraction. Unions are strong, particularly in the building trades, but do not dominate any industry.

Elizabethton, Tennessee



By B. G. GILDERSLEEVE, Elizabethton Chamber of Commerce.

WITHIN the past decade, Elizabethton, the geographic center of the United States, has shown a remarkable growth in population, from 2749 in 1920 to 15,098 in 1930, an increase of 450 per cent.

The American Bemberg Corporation, manufacturing artificial silk, is the only plant of its kind in America. This concern, with the American Glanzstoff Corporation, has expended in excess of \$22,000,000 within the past four years in building and equipping the first four of ten units, which will ultimately cost about \$60,000,000 and which at the time of completion will employ from 20,000 to 30,000 operatives.

Elizabethton is an industrial city, a commercial, agricultural, recreational, educational and historic city. It has an

equable climate, pure freestone spring water, excellent transportation facilities, churches of almost every denomination and hospitals. It is the center of the resort section of the Southern Appalachian highlands.

A \$75,000 concrete bridge over the Doe River, additional street paving, and appointment of a county agricultural agent are some of the accomplishments of 1929.

Building permits for 1929 totaled over \$500,000, based on 60 per cent of actual value. This figure is for miscellaneous buildings only and does not include the \$7,000,000 second unit of the American Glanzstoff Corp.

Elizabethton is Open Shop, but has several locals composed of skilled workmen, such as bricklayers and carpenters.

Oklahoma City, Oklahoma



@ Aero Photo Co., Oklahoma City

By Stanley C. Draper, Oklahoma City Chamber of Commerce.

OKLAHOMA CITY has the distinction of having located just outside its limits what is conceded by authorities to be the largest high gravity oil pool in American history and probably in the world. The potential flow of the 65 wells completed to this time, if allowed to flow at full capacity, would exceed that of any other high gravity pool ever discovered in America, despite the fact that other large pools have had production from several hundred wells at a time in setting their high records.

This city, which has an estimated population of 196,000, is the principal wholesale distributing point and agricultural market for practically the entire State of Oklahoma and for parts of surrounding states, particularly the Panhandle of Texas.

Building permits for 1929 amounted to \$24,373,000, which ranked eighteenth among all cities of the United States and fourth among cities of the South. Each of the cities outranking Oklahoma City had at least 100,000 more population.

Oklahoma City is considered an Open Shop city.

Seven aviation concerns are operating a total of 52 planes regularly from the Municipal Airport. It is estimated that the 298 conventions held during 1929 brought at least \$2,350,000 in new money to the city.

The 361 new industries and business concerns which came to Oklahoma City in 1929 employ 3350 people.

Important building projects scheduled to be started in 1930 include a \$2,150,000 school building program for which bonds have been voted, the 16-story Bowden Hotel, a \$350,000 warehouse development for John J. Harden, Inc., a \$400,000 home for the Alexander Drug Co., and a 5-story toll service building for the Southwestern Bell Telephone Co., which has started work on an underground cable project between Tulsa and this city. Every indication points to a \$30,000,000 building program for 1930.

ns-

on

he

al

ral

us

nd

ed

65

ge

al

00

Martinsburg, West Virginia



U. S. Army Photo Section, Bolling Field, Washington, D. C. By R. S. Kilmer, Martinsburg Chamber of Commerce.

POPULATION of Martinsburg is 18,000. The city is the home of the Interwoven Mills, largest mills for the manufacture of men's hosiery in the world. C. H. Musselman Co., a local concern, operates the largest apple by-product plant in the world. Martinsburg has the only state-maintained community apple packing plant in the United States.

There are no labor unions in Martinsburg, and there is no labor trouble.

Building permits for 1929 were \$404,000, an increase of \$73,000 over 1928.

Outstanding accomplishments of the community during 1929 included the establishment of a milk plant paying \$20,000 monthly to farmers, and the securing for this section of the site for a new State experiment station.

Brownsville, Texas



Fairfield-American Photo Aerial Surveys, S. A.

By G. C. RICHARDSON, Chamber of Commerce.

BROWNSVILLE, a thriving city of 25,000 people located at the tip of Texas, is the southernmost town in the United States, with the exception of Key West. The city is the leading financial, wholesale and jobbing center of the Lower Rio Grande Valley, from which section 30,000 carloads of citrus fruits and winter vegetables will be shipped this season.

Situated at Brownsville is one of the largest international

airports in the country. Daily air mail, passenger and express service for Mexico, South and Central America, and north into the United States is afforded by the five airlines radiating from this airport. Through it practically all the mail from that section of the United States west of the Alleghany Mountains passes on its way to Mexico and Latin America. Both the United States and Mexican governments maintain customs, immigration and medical officials at the Brownsville field.

A bill will be introduced in Congress to provide a 25-foot channel for Brownsville. With the coming of this deep water and the tremendous trade it will draw from the Rio Grande Valley as well as from Mexico, Brownsville has a bright future and should one day become the largest city on the Mexican border.

Eight hardsurfaced roads lead motorists to the 40 miles of paved streets of the city, which is rapidly becoming famous as a summer and winter resort due to the delightful all-year climate.

Pine Bluff, Arkansas



By CHARLES E. TAYLOR, Pine Bluff Chamber of Commerce.

PINE BLUFF, county seat of Jefferson County, is the third largest city in Arkansas and has a population of 30,000.

The city ranks second in the United States in manufacture of oak flooring. It leads the state as a cotton market, having facilities for ginning, weighing, storing, marketing and shipping. Fifteen large lumber yards and mills testify to the magnitude of the local lumber industry. Pine Bluff-made oak flooring, skis, textile spindles, coffins and caskets find an international market. Among other products are wooden automobile body parts for Nash cars made locally by the Seaman-Dunning Corp.; brake shoes and castings; locomotive wheels and steamboat anchors; and the famous Mexican heat powder.

Possibly the greatest achievement of the city for 1929 was the large amount of new construction, permits for which amounted to \$1,750,000. Such construction includes the 11-story Simmons National Bank, costing \$500,000; 10 brick and stone buildings at the Arkansas Agricultural, Mechanical & Normal College for Colored; \$150,000 plant of O. K. Ice Cream & Candy Co.; \$75,000 icing dock of the St. Louis Southwestern Railway Co.; \$75,000 plant of Finished Steel Products Co.; new unit of Seaman-Dunning Corp., which employs 1000 workers; \$20,000 Sunday School Annex of Central Presbyterian Church, and paving many city streets and highways in this vicinity.

Pine Bluff has both union and non-union labor.

Some Major Projects of the Week

Under the Construction Department elsewhere in this issue will be found a complete list of the week's activity in the South and Southwest, including hundreds of industrial, mining, power, transportation, building construction, and financial projects. It presents a panorama of development requiring materials, equipment and machinery of almost every description.

\$2,000,000 PIPE LINE PROJECT

Missouri-Kansas Pipe Line Company to Serve New Sections in Kentucky

Hawesville, Ky.—Prosecuting its plans to extend its natural gas pipe lines to new sections of Kentucky and Indiana, the Missouri-Kansas Pipe Line Company, Chicago, has finished more than 80 per cent of the first unit of 19 miles of 6-inch line in Ohio County to the Ohio River, while 9 miles of a 4-inch line from Hawesville to Cloverport has been completed. Three 6-inch lines have also been completed across the Ohio River into Indiana and construction of lines to several Indiana points is under way. The Connor & Son Construction Co., Kansas City, Mo., is the contractor and pipe was purchased from the National Supply Co., Tulsa, Okla.

The second unit comprises 42 miles of 8-inch line in Metcalfe County, Kentucky, extending toward Munfordville and Franklin and to a tie-in with the system. Work on this unit is about onethird complete. Surveys have been made of 17 miles of the third unit to Madisonville, and to Greenville and Utica. Distribution systems are scheduled for these cities and also for Whitesville and Hawesville, Kentucky, and for Cannelton, Tell City, Rockport and Troy, Indiana. The systems have been mapped and crews have started work. The entire project is estimated to cost \$2,-000,000.

Contract Let for 20 Miles of Railroad Line

Polo., Mo. - Contracts were recently awarded for sections 4, 6 and 7 of a joint double track railroad line being constructed between this place and Birmingham, Mo., by the Chicago, Rock Island & Pacific Railway Co. and the Chicago, Milwaukee, St. Paul and Pacific Railroad Co., as a part of a new entrance into Kansas City, Mo. Section 4, a distance of 7 miles, was awarded to the Winston Brothers Co., Minneapolis, Minn., and sections 6 and 7, a distance of 13 miles, to Peterson, Shirley & Gunther of Omaha, Neb. Contract for concrete and bridge work on sections 6 and 7 are expected to be awarded soon.

76-Mile Rail Line Approved

Vega, Tex.—The Interstate Commerce Commission has authorized the Chicago, Rock Island & Pacific Railway Company, W. H. Petersen, chief engineer, Chicago, to build a new line between this town and Forrest, N. M., a distance of about 76 miles. About 50 miles of the line in Texas will be built by the Chicago, Rock Island & Gulf Railway Company, a subsidiary.

\$1,305,000 Port Arthur Bonds

Port Arthur, Tex.—Municipal bonds in the amount of \$1,305,000 have been sold by Port Arthur to Eldredge & Company, New York, at par and accrued interest. Items covered by the issue include: Pleasure pier bridge bonds, \$300,000; street improvements, \$580,000; drainage, \$280,000; parks, \$30,000; water extensions, \$78,500, and sewer extension, \$36,500.

ORDERS 725 MILES PIPE FOR GAS LINES

Missouri-Kansas Company Has Big Expansion Program

Kansas City, Mo.-Although details have not been announced regarding the construction program of the Missouri-Kansas Pipe Line Company, of this city and Chicago, the company has purchased 375 miles of 24-inch pipe and 350 miles of 22-inch pipe, approximately 200,000 tons, from the National Supply Co., Tulsa, Okla., deliveries to commence May 10 and construction to start at the same time. Extension of its lines into Central Missouri and Southern Illinois represents only a part of the company's program, as work is already well under way on a \$2,000,000 project for carrying the company's lines into new sections of Kentucky and Indiana. Other important construction is anticipated.

\$15,000,000 for Gas Line Extensions

Southern Natural Gas Corporation Plans 800 Miles Additional—1700-Mile System to Represent Investment of \$40,000,000

Atlanta, Ga.-J. H. White, president of the Southern Natural Gas Corporation. Birmingham, and associated companies, including the Mississippi Natural Gas Corp., Georgia Natural Gas Corp. and the Alabama Natural Gas Corp. announces his company has appropriated \$15,000,000 for new pipe line construction. The company last year completed a main gas line from the Monroe field of Louisiana to Atlanta, totaling 900 miles, including laterals completed and under way. It now plans to build lines to Montgomery, Mobile, Opelika, Auburn, Brick Yard and Selma, Alabama: to Macon, Milledgeville and Griffin, Georgia, and to Meridian, Jackson, Laurel, Hattiesburg, Moss Point and Pascagoula, Miss. The new projects will total approximately 800 miles and bring the total mileage of the company to 1700 miles, representing a cost of about \$40,000,000.

It is anticipated that \$7,500,000 will be expended in Mississippi; \$4,500,000

in Alabama, and \$3,000,000 in Georgia. Construction materials will be purchased locally wherever possible, it is announced, and the labor to be employed will be procured largely in the vicinity of the work as it progresses. The company is already supplying natural gas through distributing companies to Vicksburg, Starkville, Pickens, Goodman. Yazoo City, Kosciusko, Louisville and Columbus, Mississippi; Tuscaloosa, the Birmingham industrial district, Anniston and Gadsden, Alabama, and to Rome. Atlanta, East Point and College Park. Georgia. In addition, it serves numerous industries along its lines.

The pipe line to Meridian, Miss., is now under construction, as are distributing systems at Starkville, Miss., Leeds. Ala., and Carrollton, Ga. The remainder of the projected work, both for pipe lines and distribution systems, is scheduled to begin at once and to be completed by October 1. Upon completion the system will serve a territory having an estimated population of 1,300.000.

LETTERS FROM OUR READERS

Mr. MacRae Again Stresses Importance of Federal Help for Federal Farm Colonies in the South

Southern States Associated Committees on Rural Development Wilmington, N. C.

Editor Manufacturers Record:

As the result of publication of my previous letter and your reply, I have received a valued letter from Mr. C. F. Huhlein, chairman of the board of B. F. Avery & Sons, Louisville, Ky., from which I take the liberty of quoting this constructive recommendation:

"I would ask the country newspapers to discuss the difficulties and possible remedies from the standpoint of conditions and needs in their respective counties and districts. I would ask the newspapers in the larger centers in each state to use these discussions of their country newspapers as a basis for discussing and suggesting the difficulties and remedies for their respective states as a whole. With the information thus developed, the county agricul tural agents, together with the agricultural leaders among the colleges, bankers and others directly inter-ested in each state could determine what is best for each state."

"It takes first-class ability, proper equipment and everlasting industry to succeed creditably in any line of human endeavor. Farmers are working against great odds."

As this suggestion is from one who has completed 40 years of service with a company directly identified with farming interests; who has frequently visited every farming district in the South with a view to keeping posted as to economic conditions and the trend of farming interests, it has the weight of authority.

Your reply in the Manufacturers Record reveals an agreement as to the desirability of:

First: Developing all the facts, and giving them complete publicity.

Second: That it should henceforth be out of date to express the opinion that the problems involved "can be solved by the farmer."

Third: That any constructive movement to be effective must be initiated by bankers and business men (controlling the operation of the economic machinery) in cooperation with the Government; and obviously in cooperation with the leaders among the farmers.

This clears the atmosphere and gives a sound basis. It does not, however, go far enough to get satisfying results. It is for this reason that I ask the Manufacturers Record to elaborate one or more of its four recommendations indicated as follows:

1: As to how a "revolution" is to be

initiated in the attitude of the Southern bankers and land owners; where the Manufacturers Record states that the burden of responsibility rests.

- 2: As to how land owners can be induced to cooperate through "subdivision of their estates," thus making small farms available for purchase by tenant farmers on reasonable terms.
- 3: How can the great business leaders of the country, "who have heretofore been absorbed in their own financial and manufacturing operations," be made to realize the economic conditions which have forced the farmers into the present situation, and in turn make a contact with the Government, assuming a joint responsibility with the Government, for finding a way out of that condition.
- 4: What exact steps can the Farm Board take to force (if force is needed) land owners and bankers to deal on a better basis with tenant farmers, "thus going a long way to reduce the overproduction of staple crops"?

In regard to Recommendation 1: I feel confident, without an entire change of the present economic structure and also of the present agricultural system, that Southern bankers would invite disaster if they extended loans to the tenant farmer. We should give the preference until such new system is found practicable, to the home-owning farmer. There would be then an incentive to the tenant farmer to become a farm owner.

There is no possibility of a poor farmer, on poor land, following a poor system, making a success—and this describes the tenant farmer. He is in no sense entitled to credit from financial institutions which are custodians of the funds of depositors. He should be limited to such credit as the landlord feels justified in extending to him.

As to Recommendation 3, the reaction of Mr. Huhlein, who is a business leader of recognized ability, is most encouraging and evidences the fact that a start can be made, assuming that other business leaders have an equally clear insight into the situation.

That the Government is willing to cooperate is evidenced by organization and functioning of the present Farm Board.

In regard to Recommendation 4: While open to conviction, I feel that it would be a mistake for the Farm Board to attempt to force landowners and bankers to deal on a better basis with tenant farmers; certainly until after business leaders, bankers and landlords have shown that there is some better and sounder agricultural system which can be followed with profit. When this is done, the Farm Board may need no greater force than to extend its facilities to a sound system and withdraw them from one that is, as you put it "an unspeakable curse to that section and to tenant farmers alike."

Your quotation of the experience of J. L. Evans of Ashburn, Ga., in this connection is a valuable suggestion as to

what other land owners could do. Those of us who have been actively interested in this problem are aware of Mr. Evans' valuable contribution, made through great effort and even greater risk, and feel that his experience contains much that is or can be made valuable in a final solution. What he has done is, in fact, very similar in principle to what a group of Southern men have been advocating, namely, an exact demonstration. We believe that progress must be made by showing and that it can not be made through telling.

If we are to adopt the policy of laissez faire, we will drift continuously in the direction that we have been going since the Civil War. Some of us feel that we are now on the brink of disaster. We have worked with a poor piece of machinery until it is suited to the junk pile. Nothing advantageous can come through continuing the attitude of the poor workman who blames his tools.

With your permission, I will await the further elaboration of your recommendations before replying, except briefly, to the criticism which you make of the program advocated by a group of Southern men, many of them experts, with whom I have the honor to be associated.

We feel that this program, when generally understood, will be acceptable. It has after exhaustive hearings met with the approval, in one case unanimous, of Committees in the Senate and House of Representatives of Congress, through which committees it is customary to enlist the interest of the Federal Government in any constructive program designed for the general good.

Referring to this program, the following comments from recent letters of Governor Lowden of Illinois, a nationally recognized authority on agricultural matters, are of interest:

"If it showed nothing more than that under ideal conditions farming cannot be made to yield sufficient rewards to make the occupation attractive, it might move us to give more serious consideration to the whole farm problem than we have done so far.

"I should like to see the plan proposed in the pamphlet you submitted to me, tried. If my personal endorsement will be of any service, you are welcome to use it. I am in entire accord with your fear that the economic structure of the United States is threatened by the present situation of agriculture. I have done what I could for many years to impress this view upon the business men of the United States."

Here we have a sympathetic understanding of the situation expressed by one of the greatest farmers of the country. It is in general accord with the thought of the industrial leader quoted above. It would seem that these are indications that progress can be made.

It seems important to get in motion with a view to working out a new system which will prove a cure for the present unhappy condition. Each step must be demonstrated as a requisite of progress. Such a movement can be perfected only after it has come into being.

HUGH MACRAE.

IRON, STEEL AND METAL MARKET

Decline

Pittsburgh, May 5-[Special.]-The general rate of steel production turned slightly downward last week, after at least four weeks of slow increase. This is probably the beginning of the usual seasonal downturn, which has come a month later than usual in normal years. The normal course, by precedent, would be downward to a low July, then upward through October and possibly even November. The Pittsburgh and Birmingham districts show no decrease, but there have been decreases in the east and the Chicago district. As buyers have been conservative, not anticipating any requirements, the seasonal decrease may be smaller than usual.

Certainly the general impression is that there has been a depression in business, or there would not be so much watching for signs of recovery. If so, steel tonnage has done quite well of late. Counting out December and January as months of actual depression in steel, total steel production in February. March and April has been only about 12 per cent below that of a year previous, when there was quite exceptional activity, and scarcely at all below two years previous, when business was considered very good. There are gains, of course, over the same months in all preceding years.

The agricultural implement industry continues to run at a very high rate and has orders placed for steel covering the same rate for several weeks to come. July 1 there is regularly a betweenseasons slowing down. Tractor manufacture is included in references to the implement trade and now constitutes a large part of the business. Although February was a short month it made a new high record by a wide margin in exports of "agricultural machinery and implements," the total value being \$21,-272,477, with the remarkable point that tractors, parts and accessories constituted 78 per cent of this total. It was not until 1903 that agricultural implement exports in a whole year amounted to as much as is now reported for last February.

Prices are quite irregular in several finished steel products, approximating half the total tonnage. Rails, pipe and tin plate are perfectly steady but the category does not go much further. Bars, plates and shapes have held fairly well in the general Pittsburgh area, at 1.80c, Pittsburgh, but there has been inbeen particularly low in the west.

It is a significant thing that at the Steel Corporation directors' meeting last week, at which the earnings report for first quarter was made, it was stated that prices realized on domestic shipments in the quarter were about \$1.45 per ton below those in the first quarter of last year. Any stiffening the market may have had afterwards, when steel demand ran so heavy, was lost, and then some, while it is to be noted that as prices have been weakening since the first of the year prices were lower March 31 than the average realized on shipments in the quarter, and have had another month in which to yield. quarter's earnings showed only moderate decreases from the first and fourth quarters of last year, but large decreases from the intermediate quarters. Shipments last quarter were at 81 per cent of capacity against 94 per cent in the first quarter of last year, but the apparent earnings per ton decreased no more than a dollar, or less than the decrease in prices realized.

An event in the history of tubular goods manufacture is the appearance of 24-inch seamless, for line pipe, in large quantities, to be made at the new mill of the Steel Corporation at Gary. Previously the largest seamless was 13%inch, for oil well casing. National Tube Company, the pipe subsidiary of the Steel Corporation, has booked an order for 280 miles of 24-inch seamless from Cities Service Company and 375 miles of 24-inch and 350 miles of 22-inch seamless from the Missouri-Kansas Pipe Line Company, aggregating over 200,000 tons, both for natural gas lines from Texas.

Metal Prices Continue to Sag

New York, May 5-[Special.]-The general tone of the metal markets is still one of easiness, if not weakness. Tin gives the worst exhibition of falling prices, Straits tin having sold at 33%c per pound, the lowest since October, 1922, and comparing with 73c per pound but a few years ago when a famine in tin was being talked. Now tin conditions are just the opposite of a famine. Stocks of tin in official warehouses of this country and the United Kingdom are the highest on record. Statistics for April were very unfavorable, revealing a sharp increase in world's visible supply and smaller American deliveries, implying lessened consumption.

Zinc prices have sagged to new low

Production of Steel Shows a Slight prices in Detroit on bars. Nails have been very mild. Lead prices have receded somewhat at London but American prices still hold, though buying has been light because of price uncertainty. Producers' prices of electrolytic copper are unchanged at 14c for home delivery and 14.30c c. i. f. European ports for export, but in the outside market dealers and perhaps small producers have been offering the metal as low as 131/2c, while standard copper prices on the London Metal Exchange have gone below the equivalent of 11c per pound.

> Industrial conditions throughout the country are still uncertain as evidenced, for instance, by declining shares on the New York Stock Exchange. Steel operations and volume of business are far below what they should be at this time of year and finished steel prices have a weak complexion. Automobile production in April is tentatively estimated at 425,000 units against over 401,000 units in March. May production will probably be even higher.

> There is apparently an improvement in the larger type of building, judging by the increase in orders for fabricated structural steel, awards for which for the country as a whole were 42,000 tons over the past week, the best since the middle of February.

> The minor and rarer metals have been steady in price. Platinum prices are unchanged for a third week, after a series of drastic price declines. Silver prices are steady at well over 42c per ounce. The minimum price on quicksilver has been marked up \$1 per flask to \$116. Antimony is quiet and unchanged.

> The copper market continues honeycombed with rumors. It is stated that producers will reduce prices further, say to 12 cents per pound; that the copper export association is to be reorganized; that outsiders have already sold as low as 12 cents per pound.

Taking up each rumor, one by one, a further formal reduction of price to 12 cents or any other figure does not seem logical at this time. It would seem natural and proper for producers to test present price levels for several weeks, or at least until July, for a further price decline now might not stimulate demand any better than did the first decline. The only reorganization of the copper export association appearing plausible is that which would broaden the membership to include the African and Canadian copper producers, who have heretofore refused to curtail production while American companies did so. As far as the rumor about copper having creased shading in the east, also lower levels since 1922, though declines have sold as low as 12 cents goes, there is no

r

y

n

e

evidence that the metal has sold below 13½c and it is doubted if it is freely obtainable at that figure. Consumers have been bidding that price, but would be bidding lower had copper been sold at 13½c.

Since Easter the volume of copper sales has actually been lower than before the break from 18 cents per pound, whereas improvement had been expected. Export sales in April were 45,000 tons, the best in several months, due to the heavy purchasing after the price cut. But domestic buying has not kept up with export sales. It is expected that April copper statistics will show a further increase in surplus stocks of refined metal of 15,000 to 20,000 tons.

The world's visible supply of tin increased 3623 tons during April to 36,595 tons, the largest total since records have been kept. Straits tin shipments were 9720 tons, implying a large amount of tin en route to consuming countries. American tin deliveries last month were 6780 tons, or 2000 tons under the monthly averages during the first quarter of the year and implying lower consumption in this country. As a matter of fact, however, consumers probably overbought during first quarter and so the tin delivery figures are deceptive.

At any rate tin prices were declining sharply and steadily before the announcement of statistics and declined further after they became known. At the middle of the week consumers awoke from their lethargy and bought more freely.

Lead business has been extremely quiet and further price reductions here are expected in view of the weak performance of the London market. Zinc has sagged to 4.70c per pound, East St. Louis, a new low. But declines in zinc have been very gradual.

Small Lot Sales of Pig Iron, With Production Steady

Birmingham, Ala., May 5—[Special.]
—Steady production of pig iron, active delivery and continued consumption is the schedule for the new month. Seventeen blast furnaces are in operation in the Birmingham district, with basic iron being turned out in greater quantity than foundry. Sales in the main continue in small lots but it is observed that additional business now and then is being placed by the steady melters and their reports are most satisfactory.

Reiteration of statements that the cost of producing pig iron has been reduced brings about another optimistic situation and further improvement is noted about furnaces and in the raw material supplies. For instance, crushers, screening and other machinery has at Fairfield.

evidence that the metal has sold below been placed at ore, coal and coke works 13½c and it is doubted if it is freely and handling is being done more and obtainable at that figure. Consumers more automatically.

Daily records have been made by blast furnaces recently in this district. One company announced that aggregate business booked was from 3000 to 5000 tons in excess of the production. Other announcements were to the effect that there has been further reduction of surplus stock of iron. Another statement is to the effect that with new casting machines at blast furnaces, needs of melters with small or peculiar cupolas can be filled more satisfactorily.

Sales of iron into the East were not so numerous during the past two weeks, so far as statements show, but there is yet considerable tonnage to be moved on contracts placed since April 1.

The steady melters of iron in the home territory, the cast iron pressure pipe shops, are enjoying a splendid trade, comparison with the first four months of last year showing greater production and more business this year. Lettings have been received which are most encouraging. Pipe laying is now possible throughout the country, bringing on necessity for active production and shipment of the product. Very little stock has been carried on yards and specifications are filled from shops as service is assured. The radiator shop has been operating also on a schedule of five days a week and the stove makers are confident there will be need for a good stock as the season opens up. Smaller industries are buying against requirements two to four weeks ahead, the small-lot business, as stated, predominating in the market.

Machine shops and foundries report some activity, one or two being busy. Goslin-Birmingham Manufacturing Company has received contract for another immense evaporator for the Atmospheric Nitrogen Corp., at Hopewell, a machine weighing 400 tons to be made of iron and steel, iron mostly. A few years ago the shop here made several of these evaporators and had call on the first specifications when the big addition was proposed for the Hopewell industry. Other work is announced as recently received.

The steel market is steady, practically all the open hearth furnaces being in shape and 20 out of 23 making steel. Finishing mills operation is on a schedule above 75 per cent. Gulf States Steel Company still attracts attention with its developments at Gadsden, the plate and sheet mills being worked on steadily, with prospects of completion within the next two months. Plans are well in hand for the improvements, betterments and additions at the works of the Tennessee Coal, Iron & Railroad Company at Fairfield.

Republic Steel Corporation will be ready to take up production at the Spaulding ore mines where much revamping and rehabilitation is being done, new machinery, new tipples, crushers and hoisting apparatus being installed. Production at this place from the start will be 1000 tons and more ore daily. The corporation is considering the leveling of the third blast furnace, making way for other development.

Coal mining operations are quite steady. Chief State Mine Inspector W. B. Hillhouse estimates production now above that of same period last year. His official figures on coal and coke production for 1929 made public recently show a total of 18,415,914 tons of coal for last year and 4,790,176 tons of coke. Twenty-five thousand, one hundred men were employed in the mining industry.

Coke market continues fairly steady with but few of the by-product ovens out of commission. One-third of the coal produced in the state goes into coke.

The iron and steel scrap market continues slow and prices low. Heavy melting steel has shown a little improvement.

Quotations for pig iron and iron and steel scrap are as follows:

PIG IRON.

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$14.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$14.50; iron of 2.75 to 3.25 per cent silicon, \$15.00; iron of 3.25 to 3.75 per cent silicon, \$15.50.

OLD MATERIAL.

Old steel axles	\$14.00	to	\$15.00
Old iron axles		to	15.00
Old steel ralls	11.00	to	
Heavy melting steel	10.75		
No. 1 cast	10.00		11.00
Stove plate	10.00		11.00
No. 1 railroad wrought	10.00		11.00
Old car wheels	10.00		11.00
Old tramcar wheels	11.00		12.00
Machine shop turnings	7.00	to	8.00
Cast-iron borings			8.00
Cast-iron borings (chem.)	12.00	to	13.00

Progress on Viscose Unit

Parkersburg, W. Va.—Construction is approximately 50 per cent complete on the second unit of the Viscose Company's plant here, which will increase the production of the plant to 1,200,000 pounds of rayon yarns monthly. John P. Pettyjohn & Company, Lynchburg, Va., are general contractors for the unit and principal subcontracts have been awarded as follows:

Structural steel-McClintic-Marshall Company, Pittsburgh, Pa.

Miscellaneous iron work—S. J. Creswell Iron Works, Philadelphia, Pa. Roofing, sheet metal work and skylights— H. H. Ward Company, Chester, Pa.

Painting and glazing—Hoober & Null Company, Philadelphia

Plumbing and drainage — Walter W. Muench, Philadelphia

Cellized floors-Cellized Floors, Inc., Philadelphia

Brick—McArthur Brick Company, McArthur, Ohio
Lumber—Adams, Payne & Gleaves, Roanoke, Va.

HIGHWAYS AND MOTOR TRANSPORT

\$15,000,000 FOR SOUTH CARO. this bridge will be the first in the United LINA ROADS

Bids Invited on \$7,000,000 of Con-

struction

Columbia, S. C.-The State Highway Commission has approximately \$15,000,-000 for beginning construction on a statewide system of hard-surfaced roads and has authorized Ben M. Sawyer, chief highway commissioner, and Charles H. Moorefield, chief highway engineer, to select roads of prime importance for immediate improvement from a list already approved for construction. Highways connecting centers of population and important roads in which links remain unpaved will be built first. More than \$2,000,000 of bridge construction will be included in the program, which is a part of a general schedule of road building provided by a \$65,000,000 bond issue. Bids will be opened May 20 for construction to cost about \$7,000,000.

CLEARS WAY FOR \$4,000,000 BRIDGE

Supreme Court Ruling Enjoins States From Breach of Contract to Build Structure Over Ohio River

Henderson, Ky.—By a ruling of the Supreme Court of the United States, in an original action between the State of Kentucky and the State of Indiana relative to the construction of a bridge over the Ohio River between Evansville, Ind., and Henderson, the State of Indiana is enjoined from breaking a contract to erect the bridge in co-operation with Kentucky. The two states entered into a contract September 11, 1928, for constructing such a bridge, estimated at that time to cost about \$4,000,000. Legal questions were involved and citizens of Indiana started litigation in both the State and Federal courts, the United States Supreme Court ruling that the obligation is binding upon the parties

Notwithstanding the litigation, considerable progress has been made in the development of details. Work of completing the plans has been carried forward, it is said, and as soon as formal notice of the Court's decision has been received by the highway commissions of the two states, it is understood that plans will be completed without delay and work on the structure started as soon as possible. Barring further delays progress from now on should move without interruption. It is thought

States to be built under such arrange-

Cotton Fabric in Highway Paving

For three and a half years a very interesting experiment in the use of cotton fabric as a binder for a highway surface has been under way in South Carolina. On a section of road surfaced with a small sized gravel with a mixture of sand and clay for binder, the surface was first scarified, and as it gradually rebounded under traffic was kept smooth by the use of road machines

In letters to the Manufacturers Rec-ORD, C. H. Moorefield, highway engineer for South Carolina, describes the experiment as follows:

"A light tar of eight to thirteen specific viscosity (Engler, 50 cc. at 40°C.) was applied at a rate of one-fourth gal-lon per square yard. The cotton fabric was spread in longitudinal overlapping strips the next day while the tar was still sticky enough to hold the fabric to the road. Approximately .4 of a gallon per square yard of asphalt of 150 to 200 penetration (100 grs. 5 secs. at 25°C.) was then applied hot and immediately

covered with about fifty pounds per square yard of very coarse sand, which was found to be considerably more sand than was actually needed.

"It is somewhat problematical as to what extent the use of cotton fabric re-inforcement increases the life of our usual type of bituminous surface treatment. It seems to reduce the mainte-nance cost during the first couple of years, particularly that of repairing progressive failures beginning at the outer edges of the treatment, but at a somewhat later stage in the life of such treatments it is often necessary to scarify them and retreat, and at that particular time the cotton fabric might be of considerable disadvantage unless some change in the ordinary technique of retreatment is developed. Until our experimental stretches of surface treatment in which cotton fabric was have passed this stage, I do not believe that we will be warranted in making any very broad statement as to the benefits to be expected from the use of the cotton fabric.

"The mill that made up the cotton reinforcing particularly for this work states that:

"This fabric weighs approximately 7 ounces to a 40-inch width, but was made 55 inches wide. The counts and yarns are 7 ply of yarn 4. This fabric is classed as Cider Duck, as it is very similar to an open weave class of goods which is used for making bags to load hydraulic cider presses tankage

Semi-Trailer Unit Hauls Gasoline for Nashville Firm



The semi-trailer gasoline hauling unit here pictured was recently placed in service by the Apex Oil Corporation, Nashville, Tenn. The outfit has a capacity of 1400 gallons and is drawn by a T-42 General Motors truck-tractor. It was built by the Columbian Steel Tank Co., Kansas City, Mo., and delivered through the Equipment Company, Nashville, Columbian distributor in that territory. The Columbian integral frame principle was employed in fabrication of the truck tank, eliminating the drop frame normally used. In this construction the rear wheel assembly is attached directly to the frame of the truck tank, which is made possible in turn, it is said, by the mono-metallic construction of the Columbian product and the extended partition feature which provides a rigid frame structure making additional tank supports unnecessary.

NEW AND IMPROVED EQUIPMENT

Electric Hoists

A line of electric hoists with capacities from ½-ton to 10 tons is announced by the Milwaukee Electric Crane and Hoist Corporation, Milwaukee, Wis., a division of the Harnischfeger Corporation, Milwaukee, but operated independently. The hoist is the joint product



Designed for Operation at High Speed

of Harnischfeger and Milwaukee Crane engineers and is designed for high speed operation. A rapid rate of travel speeds up the handling of materials and makes the hoist versatile and adaptable for many services. It is equipped with roller bearings throughout, while other features of construction include forged, heat-treated gears and pinions, forged steel wheels and alloy steel shafts ground to size. Additional features are push button control, single or variable speed control, and oil bath lubrication for gears and brakes.

Midwest Haulage Locomotives

The Midwest Locomotive Works, Hamilton, Ohio, recently put in production a new line of gasoline driven haulage locomotives, suitable for industrial service in quarries and clay pits, on



Equipped With Timken Bearings

construction or excavation projects, in general industrial plants for haulage or as shifting engines on railroad service. When complete, the line will include individual ratings of 4, 5, 6, 7, 8, 9, 10, 12. 16. 20 and 25 tons. Main features of design and construction are uniform

for the whole line, with variations in Power is transmitted by a multiple-disc the size and weights of parts. The locomotives are of the single truck, outside frame type, a patented one-piece frame being made of semi-steel casting. Wheels are fixed to the axles and the journals as used are equipped with Timken bearings made by the Timken Roller Bearing Company of Canton, Ohio. Trucks may be arranged for various track gauges.

Mechanical Bulldozer

"The Bully" gear operated bulldozer manufactured by Niess and Company, Inc., Minneapolis, Minn., is described as a new development in that type of equipment and designed for use with Cletrac tractors made by the Cleveland Tractor Company, Cleveland, Ohio. A power transmission unit composed of pinion



For Use With Cletrac Tractors

and bevel gear, together with spur pinion and gear segment is employed in connection with twin disc clutch and brake. gears being enclosed in an oil-tight housing attached to transmission case of the tractor with clutch and brake mounted on outside of the gear case. Advantages claimed for the gear operated method include: Fast and positive blade action, wide travel radius of blade, high lift and additional clearance. The blade is controlled by a single lever and may be locked to the ground or allowed to float, its lifting being practically automatic. Anti-friction bearings are employed in the transmission unit and all moving parts are set on lubricated bearings. "The Bully" is made in two types and designed for Cletrac models 20, 30, 40 and 80-60.

Half-Yard Convertible Excavator

The Orton Crane & Shovel Company, Chicago, announce the development of an excavator, new model H, embodying improvements which apply particularly to speed and ease of handling while the machine is digging, hoisting, swinging or traveling. The excavator is equipped with a 40-horsepower, four-cylinder gasoline engine provided with an accelerator arranged for both hand and foot operation, an electric starter, oil filter, air cleaner and other modern accessories.

clutch and steering is by a hand wheel in the cab, the brakes being applied to either of two differential shafts. Body is of heavy construction electrically welded and power shafts are of heat treated chrome alloy steel. Main hoisting drum gives a single line speed of 160 feet per minute, while friction clutches are of the double cone type equipped with heat and moisture-resisting "Orcoin" blocks. Shovel is fitted with a 16-foot heavy electrically welded boom and a 121/2-foot electrically welded dipper stick with numerous diaphragms. The excavator is convertible to shovel, dragline, ditcher or skimmer.

Strayer Electric Bucket

Electrically controlled and operated, a new Strayer electric clamshell bucket has been announced by the Erie Steel Construction Company, Erie, Pa. It is described as being capable of operating within its own height, digging in and



Clamshell Bucket, Electrically Operated

loading to capacity if desired, while the whole or any part of the load may be dumped as needed. It will dig as much or as little as the operator wishes and no particular care is required to control the bucket, as an automatic feature protects the mechanism. The bucket is built entirely of steel with digging scoops heavily reinforced for hard service. It handles coal, coke, broken open hearth slag, sand, stone, cement clinkers and similar bulk material and is manufactured in capacities of three-fourths of a yard and up, either a, c, or d, c., for inside or outside work.

CONSTRUCTION DEPARTMENT

Covering the initial announcements new under takings with additional informationabout enterprises previously men-tioned. The date at the end of an item indi-cates prellmi-nary facts were given in a pre-vious issue.

NEW ENTERPRISES

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ala., Birmingham — City, A. J. Hawkins, Engr., let contract to Millsap & Parker, and Nichols Construction Co., at \$110,750, for grading municipal airport.

D. C., Washington — Aeronautical Div., Dept. of Commerce, Washington, let contract to Georgia Electric & Construction Co.. Inc., 1518 First Ave., Columbus, Ga., at \$15,688.50, for constructing beacon lights along route of Norfolk-Washington airway; to be in operation in 150 days.

Fla., Jacksonville—City Comsn. plans erecting weather bureau building at municipal airport provided Federal Government will establish branch.

lish branch.

Ga., Atlanta—Eastern Air Transport, Inc., Ralph S. Westing, Business Mgr., Sperry Bldg., Manhattan Bridge Plaza, Brooklyn, N. Y., advises will erect additional airplane overhaul and repair shop adjoining present hangar, Candler Field, and addition to present hangar consisting of executive and accounting office over present machine shop and supply depot; not planning moving main executive offices to Atlanta in near future.

5-1

I.a., Baton Rouge—Airport Comsn. authorized by Police Jury to call for bids on administration building, hangar and field lighting at airport.

La., Baton Rouge—Standard Oil Co. of Louisiana erect \$35,000 hangar at Parish Airport; 100x150 ft.

W. Va., Charleston—City, W. W. Wertz, Mayor, starting construction work at air-port, leased by West Virginia Airways, Inc., Harold B. Shadle, Pres., Edgewood Drive.

Tenn., Johnson City—Tennessee Aero Corp., Bill Stroup and Herb Toomery, leased J. T. St. John Farm, Watauga Hwy., and will start work removing trees and grading for air-port; provide 2-way runway about 1800 ft. long.

Bridges, Culverts and Viaducts

Proposed Construction

Arkansas—State Highway Comsn. receives bids for 4 bridges. See Roads, Streets, Pav-

Ala., Mobile—State Highway Comsn., Montgomery, received low bid from Bay Construction Co., Mobile, \$66,492, for steel and conc. bridge with central pivot span over Three Mile Creek, Mobile County, on Mobile-Selma Highway; R. D. Jourdan, State Highway Engr.

Ala., Mobile—Mobile County Bd. of Revenue, considering expending \$1,109,000 for bridge to Dauphin Island. See Financial News Columns.

Ark., Clarendon—State Highway Comsn., Little Rock, plans letting contract May 14 for bridge over White River at Ewan St., Clarendon; contingent upon completion pre-liminary work by C. S. Christian, State Highway Engr., and Ira G. Hedrick, Inc., Conslt. Engr., 1132 Central St., Hot Springs. 4-17

Ky., Newport — City Commrs. considering expending \$250,000 to improve Ohio River Bridge and river front.

La., Ville Platte—Evangeline Parish Police Jury, C. P. Aguillard, member, Chataignier, receives bids May 12 for 70-ft. bridge over Bayou Marron at Duplechain crossing, near Chataignier.

Maryland — State Roads Comsn. received w bids for 3 bridges. See Roads, Streets, Paving.

Md., Baltimore—City, Bd. of Awards, receives bids May 21 for Eastern Ave. underpass, Baltimore, 1900 ft. long, 77 ft. wide, with center ramp and 3 plate girder rallroad bridges; Nathan L. Smith, Highways Engr.; J. E. Greiner Co., Engr.; estimated cost \$550,000. \$550,000

Miss., Macon — Noxubee County Bd. of Supvrs., C. V. Adams, Chancery Clk., receives bids May 10 for 3 conc. and steel or creosoted timber bridges in Dist. No. 4: On Macon and Mashulaville road—28 ft. clear span over Montgomery Hill Branch west of Macon; on Shuqualak and Fearn Springs road—three 28-ft. clear spans over Sudberry Creek west of Shuqualak; two 28-ft. clear spans over Hit Creek west of Shuqualak; for 2 bridges over sloughs in Noxubee River Swamp. Brooksville and Lynn Creek road. Dist. No. 5; two 28-ft. clear spans west of Brooksville; for 6 conc. and steel bridges on Macon and Cooksville road, Dist. No. 2; over slough on Ash Creek Swamp; over Poag's Ditch No. 2 and No. 1; over Branch at Circle; over Woodward Creek.

Miss., Natchez—City, S. B. Lamb, Mayor, plans conc. bridge across bayou on Duncan Ave. leading to Duncan Park.

North Carolina—State Highway Comsn., Received to the for 2 roads. See Roads.

North Carolina—State Highway Comsn., receives low bids for 2 roads. See Roads, Streets, Paving.

Okla., Tulsa—City, Dan W. Patton, Mayor, received low bid from H. L. Cannady Co.. 116 S. Lewis St., at \$127,435 for Main St. elevation, First to Archer St.; K. R. Teis, City Engr

Tenn., Knoxville — Knox County receives bids soon for 12 conc. bridges across streams on following roads; Weisbarger, Pickens Gap, Lowe's Ferry, Lovell's Pike, Ball Camp Pike, Martin Mill and Thorn Grove roads, Kimberlin Heights and Hardin Valley roads; cost \$15,000.

Texas—See Roads, Streets, Paving.

Texas—State Highway Comsn. plans 2 underpasses. See Roads, Streets, Paving.

Tex., Beaumont—State Highway Comsn., Austin, plans building bridge this summer over Neches River, on Highway No. 40, near Beaumont between Woodville and Zavalla; cost \$50,000; G. C. Wickline, State Bridge Engr.

Engr.

Tex., Cotulla—State Highway Comsn., Austin, made initial appropriation of \$14,776 toward 846 ft. improvement on Nueces River Bridge in LaSalle County, preceding paving work on LaSalle County highway; Gibb Gilehrist, State Highway Engr.

Tex., Port Arthur — City, J. W. O'Neal, Mayor, will let contract May 29 for constructing Pleasure Pier Bridge; lately noted considering plans of Scherzer Rolling Lift Bridge Co., 153 W. Jackson Blvd., Chicago. 5-1

Virginia—State Highway Comsn., Richmond, considering highway bridge across western branch of Nansemond River at Reids Ferry, about 500 ft. from present

bridge; swing span with navigable opening of 35 ft. horizontal clearance between fenders, and 12.3 ft. vertical clearance above mean low water under draw span when closed; public hearing to be held May 6 in U. S. Engr. office, Norfolk.

Virginia—State Highway Comsn. received low bids for 2 bridges. See Roads, Streets, Paving.

Va., Newport News—See Buildings Proposed—Miscellaneous Buildings.

Va., Norfolk—Norman Z. Ball, Engr. of Bridges, Norfolk, advises entire project regarding Campostella Bridge has been held uppending negotiations for another bridge. 5-1
Va., Richmond — City, Dept. of Public Works, R. Keith Compton, Dir., considering lowering grade of Lombard St. and constructing underpass at railroad tracks, total estimated cost \$100,000 to \$130,000.

West Virginia—State Road Comsn. receives ds for 2 bridges and 2 culverts. See Roads, bids for 2 bridg Streets, Paving.

Contracts Awarded

Ky., Burnside—Southern Ry. Co., B. Herman, Ch. Engr., Washington, let contract to Mount Vernon Bridge Co., Mt. Vernon, Ohio, for 700 tons fabricated struct. steel for bridge at Burnside.

La., De Ridder—Beauregard Parish Police Jury, reported, let contract to Austin Bridge Co., Linza Bidg., Dallas, for rein. conc. bridge over Sabine River, near Marysville, Cook County, Tex., connecting Louisiana and Texas; estimated cost \$100,000.

N. C.. Winston-Salem — Winston-Salem

N. C., Winston-Salem — Winston-Salem Southbound Ry. Co., H. E. Frles, Pres., let contract to Boyd & Goforth, Builders Bidg., Charlotte, \$18,000 to \$20,000, for underpass at First St., 23 ft. high and 16 ft. wide, with abutments full width of street. 1-23

Oklahoma—See Roads, Streets, Paving. Tennessee—Dept. of Highways and Public Works let contract for 8 bridges. See Roads,

Works let contract for 8 bridges. See Roads, Streets, Paving.

Tex., Dallas—City, J. Waddy Tate, Mayor, let contract to T. H. Johnson Co., North Texas Bldg., at \$43,800, for approaches to new Cadiz St. underpass; John M. Young, City Engr.

Canning and Packing Plants

Ala., Selma-W. J. M. Belninger Co., Morristown, Tenn., reported, acquired Childers Canning Co.; will operate.

Canning Co.; will operate.

Fla., Cocoa—Parks & Van Nest, Inc., have site on Dixle Highway for grapefruit canning plant, capacity 600 cases daily.

Fla., Fort Pierce—Florida Indian River Canning Co., C. W. Peters, Secy., started work on 80x180 ft. canning plant, daily output 1000 cases; 1 story with upper story 80x 50 ft.; cement floors; metal roof; cost \$14,000; built by day labor J. K. Stephens Construction Co.; J. K. Stephens, Archt. See Want Section—Machinery and Supplies. 4-24 N. C., Greensboro—Guilford County Bd. of

N. C., Greensboro—Guilford County Bd. of Agriculture, R. Flake Shaw, Pres., reported, interested in establishment of canning plant.

Tex., San Antonio—W. E. Wilkins, 1016-Gladstone St., reported, has contract for can-ning plant George W. Wilson Co., 1700 N. Alamo St.; main building will contain offices-

and stores; 40x90 ft., conc. and stucco; gaarge, 40x43 ft.; Spillman & Spillman, Archts., Alamo Bank Bldg.

Tex., Weslaco—Mackay & Lehman, La-Feria, reported, interested in establishment citrus packing plant.

Tex., Weslaco—L. E. Snavely, Harlingen, reported, construct citrus packing plant.

Clayworking Plants

Ala., Tuscalossa — Stephenson Brick Co., 2027 Fourth Ave., N., Birmingham, reported, acquired brick plant of Southern Cities Sup-ply Co.

ply Co.

Tex., Houston—Houston Brick & Tile Co.
incorporated; James H. Edmonds, 901 Barkdull St., Pres.; company is now operating
former plant of Houston Brick Co., on Liberty Rd.; production capacity 20,000 brick
daily; will install 12 new down draft kilns;
will manufacture pressed brick of all colors
and hollow building tile; additions will triple
present capacity; expend \$100,000; Dave
Oliver, Plant Supt. See Want Section—Machinery and Supplies.

Tex. Palestine—Industrial Committee of

Tex., Palestine—Industrial Committee of Chamber of Commerce, reported, negotiating with Athens capitalists for establishment of brick and tile plant.

Coal Mines and Coke Ovens

Ala., Nauvo-Nauvo-Black Creek Coal Co. Birmingham, started Installing washer at mines; soon let contracts for elevators, conveyor belts, etc.

Tennessee—J. G. Sterchi, 114 S. Gay St., Adolph Schmid, 3225 Woodhill Place, and Joe Gaibraith, 619 Market St., all Knoxville, have negotiations under way for opening LaFollette coal mines between La Follette and Jellico; will require constructing about 10 mi. railroad line.

Cotton Compresses and Gins

Ark., Blytheville - Jake Unger, reported, construct cotton gin.

Ga., Savannah—East Side Compress Co., capital \$25,000, incorporated; C. O. Golson, 532 E. 44th St.

Drainage, Dredging and Irrigation

Ala., Birmingham—City, A. J. Hawkins, Engr., opens bids May 30 for earth and rock excavation, Section 1, Village Creek Drainage Project, from point approx. 4800 ft. west of western city limits to Ave. F, Ensley; 79,600 cu. yd. earth excavation; 36,400 cu. yd. rock excavation; 500 sq. yd. riprap masonry.

Miss., Blue Mountain—New West Hatchie & Owl Creek Drainage Dist., Tippah County Bd. of Supvrs., will receive bids about June 1 for drainage ditches, etc.; \$18,750; F. A. Livingston, Engr., Louisville, Miss.

Tex., (Clearlake - See Miscellaneous Con-

Tex., Edinburg — Cement-Gun Contracting Co., Willis Leriche, V.-Pres. and Gen. Mgr., Allentown, Pa., advises report is incorrect that company has contract for Gunite work involving \$270,000 for Hidalgo County Irrigation Dist. No. 5.

gation Dist. No. 5.

Tex., Edinburg — Hidalgo County Water Improvement Dist. No. 6, A. L. Cramer, Pres., Bd. of Directors, Engelman Gardens track, opens bids June 3 for irrigation system improvements; Item 1, furnishing and laying 1,000,000 sq. ft. canal lining, including all earth work; Item 2, furnishing and laying 221,500 sq. ft. canal lining (this work included in Item 1) and contract to be let only in event no contract is let for Item 1.

Tex., Presidio—J. H. Chiders, Presidio, authorized by Bd. of Water Engrs., Ausauthorized by Bd. of Water Engrs., Ausauthorized St.

Tex., Presidio—J. H. Chiders, Presidio, authorized by Bd. of Water Engrs., Austin, to irrigate 38 acres, Presidio County from Rio Grande River, to be obtained by pumping.

Electric Light and Power

Electric light and power work in connec-tion with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for

Ala., Selma—Alabama Power Co., Birming-ham, reported, install white way system on lower Broad St., Alabama and Lauderdale

Ark., Earle—Arkansas Power & Light Co., Pine Bluff, reported, install white way sys-tem in business district.

Ark., Rector—Electric Light & Power Imp. Dist. No. 1, Albert C. Moore, Joplin Natl.

Bank Bidg., Joplin, Mo., receives bids May 13 for furnishing materials, machinery and labor and constructing power plant and dis-tribution system.

Georgia—Georgia Power Co., Electric Bldg., Atlanta, reported, let contract to Nashville Bridge Co., foot of Shelby Ave., Nashville. Tenn., for 700 tons struc, steel for tower line and substation structures.

Miss., Laurel—Bd. of City Commrs. receive bids May 12 for furnishing materials, labor, etc., for constructing ornamental post street lighting system on various streets.

Missouri-Empire District Electric Co., Missouri-Empire District Electric Co., 122
Joplin St., Joplin, will have hearing May
14 before Federal Power Comsn., Washington, D. C., for license for Table Rock power
project on White River; construct 45
mile high tension line Aurora to Tablerock

Mo., Concordia — City, reported, defeated \$30,000 bonds for light plant. 3-6

Okla., Lamont-City receives bids June 2 or sale of electric transmission and dis-

Okla., Lamont—City receives bids June 2 for sale of electric transmission and distribution system.

South Carolina—South Carolina Power Co., Charleston, advises following projects underway: Construction of Meggetts, Ravenal and Yonges Island extension; reconstruction of distribution system at Springfield; installation of 44kv. substation at Seminole Mills, Clearwater; construction of Summerville highway extensions, 3½ miles; 1000 kv-a. substation at Williamson Mills, Charleston; construction of building, installation of oil engine plant and distribution system at McClellanville; reconstruction of distribution system at Summervile; Allled Engineers, Inc., King & Wentworth Sts., Charleston, Contr.

Tex., Centerville—City, reported, let contract to Fairbanks, Morse & Co.. 900 S. Wabash Ave., Chicago, Ill., for installing light

ystem.

Tex., Dallas—Dallas Power & Light Co., expend \$750,000 during 1930 for laying wires and power cables underground.

Tennessee—Tennessee Electric Power Co., Chattanooga, petitioned State Railroad and Public Utilities Comsn., Nashville, for approval of franchise granted company in towns of Charlotte, Cowan, South Pittsburg; franchise in Cowan and South Pittsburg are for water.

Tenn., Jackson—City, reported, has plans by Burns & McDonnell Engr. Co., 406 Inter-state Bldg., Kansas City, Mo., for light plant improvements.

mprovements.

Tex., Dallas—Dallas Power & Light Co., reported, acquired 14 acres on Greenville Ave. Rd. probably for substation site.

Tex., Trinidad—Texas Power & Light Co., Dallas, reported, let contract to Austin Co., through Texas Construction Co., Interurban Bldg., for 100 tons struc. steel for warehouse.

Va., Danville—City, reported, deferred ac-on for 2 weeks on sale of gas and electric

plants.
Va., Elkton—Shenandoah River Power Co.,
The Natl. Bank Bldg., Harrisonburg, advises permit for construction of hydro-electric project on south fork of Shenandoah
River, near Elkton, has been indefinitely postponed.

Va., Front Royal—Town voted against sale electric light plant.
4-10 of

Va., Monterey—Monterey Utilities Corp., capital \$25,000, incorporated; James A. Meredith, Fairmont; operate light and power plant.

Va., Reusens—Appalachian Electric Power Co., Roanoke, reported, announced expenditure of \$1,200,000 for enlargement of hydro electric facilities: increase plant from 6000 h. p. to 17,500 h. p.; storage water raised 9 ft.; build ripraps, etc.; work by company's forces; storage plant will be at Lynchburg, dam enlargement in Amherst County; village at Reusens.

W. Va., Weston—City, reported, having engagement in the county of the count

W. Va., Weston—City, reported, having engineering study made of sewage system requirements; report to be finished July 1.

Flour, Feed and Meal Mills

Mo., Kansas City—North & Co., Inc., chartered; Wm. E. Dwyer, 3347 College Ave. Tex., Plainview—Harvest Queen Mill & Elevator Co. increased capital \$250,000 to \$600,000.

Foundry and Machine Plants

Ala., Huntsville — Henry Hapt, reported, stablishing foundry to produce iron castings,

Okla., Henryetta—Guy E. Crain, reported, as plans for machine shop; 100x140 ft.

Tex., Houston—Texas Brass Mfg. Co., Inc., D. D. Dougherty, Secy., 1411-17 Elysian St., will install furnaces, cranes, pouring and moulding machinery. See Want Section—Machinery and Supplies.

Garages and Filling Stations

Ala., Birmingham—George Johnson, 2414 First Ave., N., let contract to MacQueen & White, American Traders Bldg., for filling station, 45th St. and Geary Ave., Fairfield; 1 story, brick, built-up roof, conc. drives; D. H. Greer, Archt., 2514 Sixth Ave., N.

Ark., Fort Smith—Edith Ward Stegall plans filling station, Rogers Ave. and S. 22nd St.

Ark., Jasper—Keeling Motor Co. let contract to Pruitt-Phillips Co. for garage; 1 story, 30x100 ft., brick, conc., comp. roof, conc. and wood floors, conc. foundations, glass front; private plans.

D. C., Washington—Sullivan & Helan, 14th and Belmont Sts., N. W., have permit for filling stations, 3000 and 3008 Newton St. and Rhode Island Ave., N. E.; \$10,000.

Fla., Fort Pierce—Standard Oil Co. let contract to Cahow Construction Co., Fort Pierce, for \$12,000 service station and garage, Fourth St. and Delaware Ave., Dixie Hwy. and State Rd. No. 8; 57x79 ft. conc. blocks, stucco, steel, transite board.

Fla., Mulberry — Phosphate Motor, Inc., hartered: William L. Hutcheson, Egbert chartered;

Ky., Newport—Heizer-Kennedy Motor Co., capital \$15,000, incorporated; J. T. Kenney, J. B. Heizer, Jr.

J. B. Heizer, Jr.

La., Franklin — Palfrey Motor Co., Inc., chartered; D. C. Palfrey, W. P. Foster.

La., Thibodaux—Drexler Motor Co., Inc., capital \$35,000, chartered; Jos. L. Driexer, Clarence J. Toupe.

Md., Baltimore—Anderson Motor Co., Arthur D. Anderson, Pres., 4636 Edmondson Ave., acquired Cook property, Edmondson Ave., between Glen Ellen Dr. and Cook Lane, for 1-story master filling station; soon start construction.

Miss., McComb—Gulf Refining Co., T. B.

Miss., McComb—Gulf Refining Co., T. B. Wilkins, started erecting \$20,000 filling station, Broadway and Maryland Ave.; 52x38 ft., 2 driveways.

Miss., Meridian—Motor Supply Co., W. O. Campbell, 2916 Fifth St., has preliminary plans in progress for \$10,000 remodeling; 1 story and mezzanine, brick. 71x130 ft., built-up roof, conc. floors; P. J. Kouse, Archt., Miazza C Woods Bldg.

Mo., Kansas City—Land-Thompson Chevrolet Co., capital \$60,000, incorporated; A. L. Land, Warrensburg; Giles Sullivan, 904 S. Quincy St., Sedalia.

Mo., Jefferson—Phillips Petroleum Corp., Bartlesville, Okla., start work at once erect-ing filling station, McCarty and Jefferson

Mo., Joplin — Jack Drury, of Southwest Battery Co., 712 Joplin St., acquired site, Wall St., between Fifth and Sixth Sts.; erect \$10,000 building.

Mo., Poplar Bluff — Continental Oil Co., Ponca City., Okla., acquired site and has preliminary plans in progress for \$10,000 filling station, N. Main St.; 1 story, brick veneer, stucco.

Mo., St. Louis—L. C. Wilderman Lubricating Co., 1929 N. Kingshighway Blvd., completing plans for filling station, Seventh and Franklin Ave.; 1 story and basement, 63x64 ft., brick, rein. conc., slate and comp. roof, plate glass; includes grease pits and wash racks; Angelo B. M. Corrubia, Archt., Arcade Bldg.

Mo., St. Louis—Phillips Petroleum Corp., 6291 Suburban St., has permit for \$10,000 filling station, 1810 Gravois St.; 1 story, 47x 24 ft., asbestos shingle roof; H. Hochman & Co., Gen. Contr., Shaw Bank Bldg.

N. C., Rosehill—Wells Bros., Inc., chartered; W. S. Wells.

sered; W. S. Wells.

S. C., Greenville—W. L. Simpson, Prop., Simpson U-Drive It Auto Livery Co., McBee Ave. at Spring St., let contract to Gallivan Building Co., Gallivan Bidg., for \$45,000 automobile storage building, S. Main St.; 2 story, 45x110 ft., 10,000 sq. ft. floor space, fireproof throughout, conc. and steel runways to second floor.

Tenn., Memphis—Pennsylvania Oil Co., 613 S. Front St., erect service station, Poplar and Belvedere St.; field stone, conc. and tile.

Tenn., Nashville — Hill Tire Co., capital \$25,000, incorporated; W. W. Acuff, 213 Chapel Ave.

Tex., Amarillo — Franklin Amarillo Co., capital \$20,000, incorporated; Frank Wolflin, 35 Oldham Circle; deal in automobiles.

Tex., Baytown—John D. Kennard let contract to C. I. Fortinberry, Goose Creek, for \$10,000 Ford agency building. Minnesota St.; 1 story, 55x100 ft., hollow tile, stucce; to be complete in 45 days.

Tex., Galveston-Gulf Refining Co., Charles A. Keenan. Mgr., 1802 A St., start erecting filling station, 61st St. and Broadwaly, a once; brick, modern.

Tex.. Port Arthur — N. M. Barrier, 425 Proctor St.. erect \$20,000 storage garage, Fourth St. and Austin Ave.; 2 story, brick, foundation for 3 stories, ramp; razing present structures.

ex., Port Lavaca—Fenner Motor Co., capi-\$12,000, incorporated; C. B. Fenner, Fred.

Tex., San Antonio-Alamo Battery Co., 1909 Tex., San Antonio—Alamo Battery Co., 1969; Broadway, let contract to Cone Construction Co., Real Estate Bidg., for battery station, S. Presa and Carolina St.: 1 story, tile, conc., tile and gravel roof, semi-fireproof, approx. 50x75 ft.; plumbing and wiring included in general contract; L. Harrington Co., Archt.-Engr., Bldrs. Exch. Bldg. 5-1

Va., Franklin-McLemore Motor Co., Inc., pital \$50,000, incorporated; Reginald W. cLemore, Courtland.

Gas and Oil Enterprises

Alabama — Southern Natural Gas Corp., rmingham, wires company appropriated Alabama — Southern Natural Gas Corp., Birmingham, wires company appropriated \$15,000,000 for extension transmission lines to Macon, Griffin, Ga., Montgomery, and Mobile, Ala, and to Pascagoula, Miss.: work to begin immediately and completed prior to Oct.; appropriation also includes cost constructing distribution systems in number Georgia, Alabama and Mississippi towns where company has franchises; giving company over 1700 miles of line; in addition to cities named it is more than likely that intermediary cities will be supplied with natural gas; total expenditure of company approximately \$40,000,000.

Ark., Fort Smith—Standard Oil Co. of Louisiana, 2134 St. Charles Ave., New Orleans, reported, acquired Quality Oil Co., operated by Henry Armstrong, including tanks, bulk plant and tracking facilities N. Second and I Sts.

Ark., Horatio—M. W. Greeson, Presco reported, has gas franchise; pipe gas freields near Fort Smith; also has franchise DeQueen.

Ark., Star City—Arkansas Natural Gas Corp., Ardis Bidg., Shreveport, La., granted 25 yr. franchise to install and operate gas

Fia., Fort Lauderdale—Florida Petroleum Terminal Co., erect \$100,000 pumping station and system of pipe lines; plant will include three 20,000 bbl. storage tanks.

Fla., 8t. Petersburg — Seaboard Oil Co., 1100 Central Ave., reported, construct central administration and importing station at Bayboro on Asbury St.; office building, warehouse and garage, 100x30 ft.; pumping house and an equipment department included in plans; erect three tanks, 20,000 bbl. capacity each; build pier, etc.

Ga., Valdosta—United Oil Co., owned by Nofford Oil Co., 904 S. Conception St., Mo-oile, Ala., reported, erecting gas plant, Val-ey and Ashley Sts.

Ga., Valdosta—Shell Petroleum Co., Shell Bidg., St. Louis, Mo., reported, construct gas plant, S. Patterson and Ashley Sts.

La., Baton Rouge—Ingalls Iron Works Co., 720 Fourth Ave., Birmingham, Ala., reported, has contract for 200 tons struc. shapes for hydrogenation plant for Standard Oll Co. Louisiana.

La., Monroe—Austin Gas Co., Inc., J. T. ustin, Pres., 403 Jackson St., changed name om Austin-Jordan Oii & Gas Co.

from Austin-Jordan Oil & Gas Co.

Md., Baltimore — Gulf Refining Co., 605

Battery Park Bidg., N. Y., reported, construct five 1 story metal buildings and 24
steel tanks, 1860 Frankfurst Ave.; iron and slag roof; steam heat; cost \$150,000; owner architect and builder.

N. C., Greensboro—Central Oil Co., capital \$190,000, incorporated; J. P. Mitchell, 1133 Seaboard Ave., N. E., Atlanta, Ga.; C. K. Boren, 1718 W. Lee St., Greensboro.

N. C. Mount Airy—Southern Public Litilians

N. C., Mount Airy—Southern Public Utili-ties Co., Charlotte, reported, negotiating for gas franchise.

Oklahoma — Barnsdall Corp., Petroleum Bldg., Tulsa, and 120 Broadway, N. Y., reported, authorized construction 800-mile pipe line to transport gasoline from refineries at Okmulgee and Barnsdall to Milwaukee, Wis.; build bulk stations every 58 miles: gasoline to be drawn off these points for distribution to service stations

within 50 miles both sides of line; capacity of 15,000 bbis. gasolne daily, with 19 pumping stations; capacity can be increased through construction of additional pumping stations; line will be of 6-in. and 8-in. pipe; will form subsidiary to construct and operate.

operate.

Oklahoma—American Utilities and General Corp., controlled by G. E. Barrett & Co., 120 Broadway, New York City, reported, contracted to purchase 150,000 shares of Class B stock of Consolidated Gas Utilities Co., First Natl. Bank Bldg., Oklahoma City, from Battles & Co., 1518 Locust St., Philadelphia, Pa., and Hale, Waters & Co., 50 Broadway, New York; Consolidated Gas Utilities serves 51 towns and cities in Oklahoma and Kansas with gas from reserves in Amarillo field, Tex.

Tex.

Okla., Bartlesville—Phillips Petroleum Co., reported, formed Philokla Gas Co., in conjunction with Oklahoma Natural Gas Corp., 112 N. Broadway, Oklahoma City; compress natural gas from Oklahoma field after gas has passed through Phillips's plant for extraction of gasoline; repressured gas will be marketed by Oklahoma Natural Gas Corp. 5-1

Okla., Sayre—State Corp. Comsn., Okla-homa City, reported, granted permit to Fred L. Coogan to build and operate carbon black plant.

Okla., Shawnee — Phillips Petroleum Co., Bartlesville, purchased service and bulk sta-tions and distribution facilities, including re-sale accounts, of Newago Oil Co.

Okla., Tulsa—Skelly Oil Co., Skelly Bldg., reported, construct 4 in. pipe line and loading rack in Veshell pool.

Tenn., Memphis — Standard Oil Co. of Louisiana, 2134 St. Charles Ave., New Or-leans, La., reported, construct \$40,000 gas storage tanks at Riverside.

storage tanks at Riverside.

Tenn., Memphis—Appalachian Gas Corp., F. R. Harlburt, Sec., Union Trust Bidg., Charleston, W. Va., reported, negotiating for interest in Memphis Natural Gas Co., supplying under contract Memphis Power and Light Co., Memphis; Mississippi Power & Light Co., Arkansas Power & Light Co., their requirements along company's main pipe line extending from Monroe fields through intermediate markets to Memphis; Appalachian Gas Corp. owns 200,000 acres gas producing lands in Ohio, Kentucky, and West Virginia fields.

fields.

Texas—Phillips Petroleum Co., Bartlesville, Okla., announced designs have been completed and equipment purchased for erection of 47th plant for production gasoline from natural gas in Gray County, Texas, being sixth Phillips natural gasoline plant in that county and supported by over 2600 acres of producing and potential gas reserves and with capacity 40,000,000 cu. ft. daily operating under natural well pressure and designed to process 60,000 gal. a day; plant will be of absorption type, with 2 distillation unts and 21 unit compressor plant of 4095 h. p.; construction will start at once.

Texas—H. L. Doherty & Co., 60 Wall St., New York, reported, let contract to National Tube Co., Frick Bidg., Pittsburgh, Pa., for 450 miles seamless pipe for initial unit of pipe line, Amarillo to Chicago district. 4-10

pipe line, Amarillo to Chicago district. 4-10
Texas—Pure Van Pipe Line Co., subsidiary
of Pure Oil Co., Pure Oil Bidg.. Chicago,
Ill., local office Goodhue Bidg., Beaumont,
W. M. Averill, V. P. in charge of operation,
completed survey and profile of pipe line extension from Chandler to Smiths Bluff refinery; total length 210 miles; work handled
by company's forces; oil to be pumped
through line by 3 main pump stations, at
Van tank farm, one 67 miles down the line
and third station 74 miles from Smiths Bluff
refinery; each of the station to be equipped
with 3 electric motor driven centrifugal
pumps, to be supplied by Worthington Pump
& Machinery Corp., Harrison, N. J. 4-17
Texas—Lone Star Co., 1915 Wood St., Dal-

Texas—Lone Star Co., 1915 Wood St., Dallas, reported, let contract to Cooper-Bessemer Corp., 200 Thomas Ave., Mt. Vernon, Ohio, for 21,000 h. p. gas engine driven compressor for 900 mile natural gas line now under construction from Texas Panhandle to Lincoln, Neb.

to Lincoln, Neb.

Texas—Railroad Comsn. of Texas, Austin, reported, granted permission to Ethane Carbon Co., to construct plant at or near Texon to burn residue gas from casinghead gasoline plants now operating in Big Lake field in Reagan county; plans include plant to consume 1,000,000 cu. ft. of residue casinghead gas daily; later plan addition.

Texas—Missouri Kansas Pipe Line Co.. 640 Otis Bldg., Chicago, Ill., reported, let con-tract to National Tube Co., Pittsburgh, Pa.,

for 725 mile of 24-in. and 22-in. seamless pipe for gas line extending Texas Panhandle to Minnesota; line when completed will have ultimate daily capacity of 200,000,000 ft. Frank P. Parrish, wires, have purchased 275 miles 24-in. and 350 miles 22-in. pipe, 200,-000 tons, furnished by National Supply Co., 600 tons, furnished Co., 600 tons, furnishe

Texas—Lion Oll Refining Co., T. H. Barton, Pres., Eldorado, Ark., reported, acquired 6000 acres in Live Oak County.

Tex., Brenham—The Texas Co., 720 San Jacinto St., Houston, let contract to Fred Appel, Brenham, at \$10,308 for bulk station; equipment furnished by Texas Co. 5-1
Tex., Dallas—Performers Oil & Gas Co., capital \$350,000, incorporated; L. B. Remy, Southland Hotel.

Tex., Dallas—Hazel-Curtis Oil Co., incororated; H. R. Shanks, 2109 N. St. Pau

Tex., Pampa—. L. J. Oil Co., capital \$48, 000, incorporated; H. W. Johns, J. R. Lewis. Tex., Port Arthur—Voth Oil Co., capital \$100,000, incorporated; O. Oberholz, 358 Fifth St.

Tex., Tyler—Irish Oll Co., capital \$50,000, incorporated; G. G. Bell, J. A. Bracken.

Texas—United Gas Co., Esperson Bldg., Houston, reported, acquired natural gas system of Moran Gas Corp., Esperson Bldg., transports gas from White Point field in San Patrico County, and distributes it in Taft, Portland, Aransas Pass, Ingleside, and Gregory. Gregory.

Gregory.

Virginia—United Fuel Gas Co., Inc., Quarrier & Dunbar Sts., Charleston. W. Va., H. A. Wallace, Pres.-Gen. Mgr., advises details on proposed construction of pipe line to serve Virginia towns not completed at this time.

3-6

Va.. Norfolk—Gulf Refining Co.. 21 State St., New York, reported, has two 55,000 gal. storage tanks and 4 warehouses under construction on 65 acre site in Berkley; also 1500 ft. bulkhead on portion of tract along Elizabeth River; refined products to be brought from Port Arthur for distribution; J. D. Rodeheaver, Asst. Engr., in Charge. 12-5

Va., Petersburg—Aero Oil Co., capital \$50,000, incorporated; J. R. Jolly, 1531 Berkley

W. Va., Bluefield — Bluefield Gas & Power Co., reported, soon begin work on gas line to Bluefield, Va.; 5 miles, cost \$50,000; construct 4-inch high pressure lines to Virginia side; install compressor station, etc. 3-6

Ice and Cold-Storage Plants

Ice and Cold-Storage Plants

Fla., Fort Pierce—George J. Rosenthal,
Meyer Kiser Bidg., and A. R. Vail, both
Miami, of Miami-Palm Beach Stock Exchange,
reported, announced plans for \$500,000, 600car cold-storage and pre-cooling plant; now
negotiating to acquire site; to be equipped
for dry and cold storage and pre-cooling, with
660,000 cu. ft. dry storage space; also plan
operating bonded warehouse; directors to include C. E. Cahow, of Cahow Construction
Co., R. R. Martin, both Fort Pierce; George
J. Rosenthal and Van C. Swearingen, Security
Bldg., Miami, and associates; construction
by Cahow Construction Co.; Stewart T.
Smith Engr., of Van Rensselear H. Green,
2 Lafayette St., New York; firm to be
formed to operate storage plant; Cahow
National Holding Corp. of Delaware, capital
\$500,000, formed to engage in general financing and construction, with directors as
above and others.

La., Jonesville—Ouachita Ice & Utilities,

La., Jonesville—Ouachita Ice & Utilities, Inc., capital \$30,000, chartered; C. J. Pope, Bunkie.

Tenn., Memphis — Kaye Ice Co., Frank Kaye, Jr., 624 Union Ave., acquired site for addition to plant.

Tex., Dallas—Republic Ice Co., Inc., capital \$150,000, chartered: John M. Welch, 2116 W. Tenth St.; manufacture ice and beverages.

Tex., San Angelo—Angelo Ice Co. increase g capital, \$80,000 to \$200,000.

Tex., Seguin—San Antonio Public Service Co., N. St. Mary's St., San Antonio, has plans complete for remodeling front and enlarging office and ice house; brick, conc.; Marvin Eickenroht & Bartlett Cocke, Archt., Maverick Bldø

Iron and Steel Plants

Mo., St. Louis—Columbia Iron Works. Inc., T. J. Feldman, 4254 Vista St., increasing capital \$18,000 to \$75,000.

Land Development

Fla., Arcadia—Chatham Farms, Inc., chartered; George Leitner, T. S. Chatham.

Fla., Crestview — Okaloosa Realty Corp., incorporated; Mallie Martin, H. D. McCal-

Fla., Deland—Talmage Gardens Co., Inc., Samuel Horner, Jr., Pres., has 255 acres east of Deland, developing 85 acres for narcissus; plans expending \$20,000 for improvements, including curing and packing houses, electrically operated.

Fla., Miami-Puryear Co. incorporated; F. Bryant, Owen Pittman, Jr., both Olympia

Fla., Sarasota—Gocio Groves, Inc., chartered; A. E. Gocio, Lockwood Ridge.

Fla., Sebring—Tropical Florida Parks Assn., Rex Beach, Pres., 322 Central Park, W., New York, expend \$100,000 improvements to Hooker Hammock; 460 acres.

Fla., West Palm Beach—Paddock & Motter, ac., chartered; F. L. Paddock, 223 Lakeland

Ky., Lancaster—Garrard Fiscal Court and City Council interested in establishment of community park.

Ky., Lexington—Charles N. Mannin, 332 S. Ashland Ave., and Edward Dabney, 144 N. Upper St., reported, develop subdivision on Tates Creek Pike, 70-acre tract.

Tates Creek Pike, 70-acre tract.

La., New Orleans—Twin Oaks Realty Co., Inc., capital \$15,000, chartered; Horace R. F. Perez, 1805 N. Dupre St.

La., Lake Charles—Raymond Farm Co., Inc., capital \$20,000, incorporated; S. A. Knapp, 1527 Pujo St.

La., Shreveport — Moretown Land Co., chartered; A. M. Moore, Marshall, Tex.

La., Shreveport — Cross Lake Land Co., Inc., capital \$50,000, incorporated; Clarence Ellerbe, Ardis Bldg.

Md., Plumpoint — Calvert Development Corp. incorporated; Almos B. Neeld, Jr.

Mo., Joplin—P. E. Tabor, Tabor Wood, N. Main St., reported, interested in development of golf course; cost \$60,000; Harry B. MacMeal, Kansas City, Mo., Golf Archt. will probably design course.

Mo., St. Louis—Donnelly Realty Co., 1308 N. Grand Blvd., capital \$15,000, incorporated; Myra B. Walsh, 6168 McPherson Ave.

Mo., St. Louis—Castleman Realty Co., 2845 Russell Ave., incorporated; E. G. Curtis, Security Bldg.

Mo., St. Louis—Laclede Park Development b. chartered; Herman Willer, 408 Pine St.

Mo., St. Louis—Continental Realty & Investment Co. incorporated; F. R. DeVille, 206 N. Kingshighway.

Mo., St. Louis—Coliseum Realty Co., capital \$300,000, incorporated; Samuel A. Mitchell, Central Natl. Bank Bldg.

Mo., St. Louis—Crosstown Realty Co. i rporated; Charles L. Weber, 119 N. Se

N. C., Durham—General Realty Co., capital \$100,000, incorporated; W. S. Lockhart, Forest Hill.

Mo., St. Louis—Thorndale Realty & Investment Co., capital \$25,000, incorporated; H. G. Finks, Richmond Heights.

Mo., St. Louis—Mineral Cork Land Co., 1018 Arcade Bldg., incorporated; Frank E. Stevens, 3614 Dunnica St.

Tex., Amarillo—Evans Farms, Inc., chartered; L. A. Wells, Rule Bldg.

tered; L. A. Wells, Rule Bldg.

Tex., Harlingen—Al Parker, LaFerio, O. W. Stuch, reported, plans \$150,000 memorial burial park, 22 acres on highway between Harlingen and LaFeria; will landscape; construct curved driveways; ornamental stone fence; install sprinkler system, etc.

Tex., Houston — Lajoys Estates incorporated; Ed H. Harrell, 1901 Lexington St.

Tex., Houston—W. L. Edmundson, Second Natl. Bank Bldg., develop 6 acre subdivision on Dumble St.

Tex., Navastoa—Terrell Realty Co., capi-

Tex., Navastoa—Terrell Realty Co., capital \$50,000, incorporated; E. H. and T. B. Terrell.

Tex., San Antonio—Del Monte Development Co., capital \$30,000, incorporated; Thomas T. Taylor, 501 W. Magnolia St.

Va., Petersburg — Service Realty Corp., capital \$100.000, incorporated; R. G. Spratley, Watson Court.

Va., South Boston—Halifax County Golf Club plans development of golf course.

W. Va., Charleston—Shady View Land Co., capital \$25,000. Incorporated; H. L. Carney, Charleston Natl. Bank Bldg.

Lumber Enterprises

Ala., Haleyville—Pocahontas Lumber Co. soon start erecting planing mill.

Fla., Indian Town—Long Leaf Lumber Co. construct telephone line, Stuart to Indian Town, along line of Gaines Highway.

Ky., Louisville—Campbell & Summerhayes, Inc., capital \$35,000, chartered to acquire and operate Embry Lumber Co., 16th and Arbegust St.

Mo., Joplin — Speck Lumber Co., 219 N. Harlem Ave., acquired Duncan-Klaner Lumber Co., Tenth St. and Sergeant Ave.; will operate business at Duncan-Klaner location as Speck Lumber Co.

Mo., Miller—Miller Lumber Co., capital \$40,000, incorporated; H. W. Putnam, F. N. Jones, both Carthage.

Jones, both Carthage.

Oklas, Medford—Long-Bell Lumber Co., A.
B. Everitt, Asst. Gen. Mgr., R. A. Long
Bldg., Kansas Clty, B. M. Combs, Locuil
Mgr., rebuild yards and offices, E. Cherokce
Ave., recently burned; first erect warehouse
and structures to house lumber and later
erect office.

Tex., Lagrange-H. F. Schubert open lumber yard; also erect dwelling.

Va., Narrows-New River Lumber Co., Inc., corporated; Bernard Mason, Pearisburg.

Ark., Little Rock—Diamond Mining & Engineering Corp. of Arkansas incorporated; W. C. Ribenack, Marion Hotel; leased tract in Pike County and completed plans for develop-

ment.

Ga., Camak—Weston & Brooker Co., Columbia, S. C., erect large crushed granite plant at once; modern, steel, conc., ultimate capacity of 60 cars daily, storage capacity of 80,000 tons, complete facilities for preparing, grading crushed granite for all types of highway construction, concrete structures and railway hallast. railway ballast.

Md., Baltimore — Louisiana Geographical Exploration Co., 10 Light St., incorporated; George S. Parlin, Edmund Burke, Jr., both 63 Wall St., New York; deal in real estate for purpose of exploring minerals.

for purpose of exploring minerals.

N. C., Morgantown—Silver Creek Mines, Inc., chartered: C. Marshall Gravatt, Asheville; May Mills, Brindletown.

Tenn., Watauga—Holston Quarry Co., General Bidg., Knoxville, installing equipment costing over \$100,000, preparatory to opening John R. Dickey rock quarry, not later than July 1; equipment includes 2 large rock crushers, steam shovel, locomotive, 2 7½-ton trucks and 7 large conveyor belts; will market 2, 1, ½-in. and screen stone.

Miscellaneous Construction

Ala., Birmingham—Rip-Rap—See Drainage, redging and Irrigation. Dredging and

Dredging and Irrigation.

Arkansas—U. S. Engr. Office, Postal Aelegraph Bldg., Vicksburg, reported, making surveys near Old Town on Arkansas side of Mississippi River, with view to awarding contract June 2 for constructing 1,100,000 cu. yd., new loop levee to safeguard old levee established at that point.

Fla., Miami—S. S. Kresge, 455 Seventh Ave., New York City, construct swimming pool, 5625 Pine Tree Dr.; F. E. Zurwelle, Archt.

Ga., Augusta—City, Thos. S. Gray, Chmn., Levee Comsn., has low bid from Porter Con-structors, Inc., Independence Bldg., Charlotte, N. C., at \$42,360, for rebuilding gates and 80-ft. wing wall, Butlers Creek; Elroy G. Smith, Constt. Engr., Herald Bldg. 4:3

Ky., Newport—River Front—See Bridges, Culverts, Viaducts.

Ky., Newport—River Front—See Bridges, Culverts, Viaducts.

Louisiana—U. S. Engr. Office, Second New Orleans Dist., foot of Prytania St., New Orleans, opens bilds May 27 for following levework, straight contract work, desiganted as follows by district, name, location, estimated yardage: Lower Tensas Levee Dist.—Cottage Bend (663-5R), 2,020.000; Atchafalaya Levee Dist.—Allemania (857R), 775,000; Port Barrow (886R), 50,000; Lafourche Levee Dist.—Pikes Peak (908.5R), 540.000; Lower Bonnet Carre (930R), 245,000; Ama (947R), 235,000; Barataria Levee Dist.—Belle Chasse-Concession (988-990), 137,000; Woodland-Magnolia (1014.5R), 90,000; Amoretti (1019.5R), 140,000; Portchartrain Levee Dist.—Chatworth (846-7L), 615,000; Granada (849L), 410,000; Virginia—Indian Camp (868L), 340,000; Butler-Kenner (950L), 500,000; Lake Borgne Levee Dist.—Harlem (1007L), 85,000.

La., New Orleans—Louisiana Mausoleum &

La., New Orleans—Louisiana Mausoleum & Crematory Corp., Charles Tolmas, Pres., 508 Carondelet St., completed final plans for con-

structing \$100,000 first unit of \$250,000 mausoleum and crematory, Metairie Rd., Jefferson Parish; start work in 60 days; include 1500 crypts.

Maryland - Jetties - See Roads, Streets,

Md., Baltimore—Bd. of Awards, Office of City Register, City Hall, opens bids May 14 for pedestrian underpass, Druid Hill Park; conc., approx. 10 ft. wide, 10 ft. high, 150 ft. long, incline approach at one end, level approach at other; Winfield F. Courts, Park Engr., Druid Hill Park.

Miss., Laurel—Bd. of City Commrs., City Hall, opens bids May 12 for constructing swimming pool; rein. conc.; Paul Klyce, City Engr., P. O. Box 282.

Miss., Tupelo—Constructing Quartermaster opens blds May 6 for constructing 2 monuments and foundations therefor, 1 at Tupelo and other at Brice's Cross Roads, Lee County.

Mo., Kansas City—Norris Grain Co., Fred C. Hoose, V.-Pres. and Local Mgr., 940 Board of Trade Bldg., may add 1,000,000 bu. of storage room to 1,800,000-bu. grain elevator.

Mo., St. Joseph—Buchanan Elevator Co., 1620 S. Fourth St., has plans for additions to grain elevator, costing 5125,000 with elevating, conveying and other mechanical equipment; L. S. Metcalf Co., Engr., 111 W. Jackson Bldg., Chicago, Ill.

Okla., Enid—Oklahoma Wheat Pool Elevator Corp., subsidiary of Oklahoma Wheat Growers' Association, reported, acquiring 140 rural grain elevators in Northwest Oklalahoma and Texas Panhandle.

140 rural grain elevators in Northwest Oklalahoma and Texas Panhandle.

Texas — Following applied to Chicago, Rock Island & Pacific Ry. Co., J. E. Gorman, Pres., Chicago, Ill., for permission to erect grain elevators, along new line between Morse and Dalhart: At Capps. Station No. 1—Roberts Grain & Feed Co., 1509 Johnson St.; Otis Phillips, 2606 Hughes St., and Great West Mills, 2400 N. E. Third St., all Amarillo; Altman, Station No. 2—Roberts Grain & Feed Co.; Great West Mills; McDade Pate Grain Co., and Otis Phillips, all Amarillo; A. P. Borger, Borger; Chaning Elevator Co., Channing; Phillips, Station No. 3—Otis Phillips; Texhoma Grain Co.; McDade Pate Grain Co., and Great West Mills, all Amarillo; Chapman Milling Co., Sherman; Channing Elevator Co.; Clay Johnson, Medical Arts Bldg., Fort Worth; Exhume, Station No. 5—Flowers & Willingham, Dumas; Great West Mills; Channing, Station No. 6—Channing Elevator Co.; elevators to be of standard iron clad type, 25,000 to 30,000 bu. capacity.

Tex., Brownsville—Navigation Dist. Communications of the standard iron clad type, 21,700.

Tex., Brownsville—Navigation Dist. Commrs. called election for May 29 on \$1,500,000 bond issue for constructing wharves, docks, warehouses, grain elevators, towing facilities, etc., to supplement \$2,000,000 already voted.

Text Clearles Charles M. Jack Fig.

ready voted.

Tex., Clearlake—Charles M. Lusk, Esperson Bidg., Houston, dredging channel 7 ft. deep, 30 ft. wide to boat house; construct swimming pool.

Tex., Dimmitt—Dimmitt Texas Wheat Growers' Association, P. H. Dyer, Secy., soon let contract for \$15,000, 25,000-bu. grain elevator.

vator.

Tex., El Paso—El Paso County, reported, expend \$300,000 for flood control along Rio Grande River.

Tex., Hale Center — Hale Center Texas Wheat Growers' Association, Keith Catto, Secy., let contract to W. S. Roberts Construction Co., Amarillo Bidg., Amarillo, for 25,000-bu. grain elevator.

Du. grain elevator.

Tex., Port Arthur—J. Imhob & Sons, Seventh and Ft. Worth Ave., Port Arthur, has contract for sand, gravel and cement in connection with sea wall of City of Port Arthur; W. Horace Williams Co., Inc., Gen. Contr., 833 Howard Ave., New Orleans, La.; J. B. Converse & Co., Inc., Engrs., Industrial Bldg.

Tex., Fort Worth — Lone Star Elevator Corp., newly formed, applied for permit for \$100.000 grain elevator, S. Main St.; 215x54 ft., 177 ft. high, rein. conc., 500,000 bu. capacity.

Va.. Alleghany—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond. reported, let contract to Walton Construction Co., Inc., Liberty Trust Bldg., Roanoke, for Alleghany tunnel, costing over \$1,000,000 single track.

Va., Newport News—See Buildings Propos—Miscellaneous Buildings.

W. Va.. Charleston—City applied to U. S. Engr. Office, Huntington, for permission to construct sewer and bulkhead in Kanawha River at point on left bank opposite Ruffner Ave.

Miscellaneous Enterprises

Ala., Mobile—International Paper Co., 100 E. 42nd St., New York, plans paper bag plant at kraft mill.

Ark., Searcy—Southwest Dairy Products Co., Santa Fe Bldg., Dallas, Tex., acquired site for dairy receiving and manufacturing station; also erect strawberry packing plant.

Fla., Jacksonville—Southland Dairy Products let contract to George D. Auchter Co., 1361 Avondale St., for remodeling warehouse, Dennis and Stockton St., for creamery and milk distributing depot; 125x890 ft., brick; install modern refrigerating equipment; \$25,000.

Fla., Panama City—Southern Kraft Corp., J. H. Friend, V.-Pres., 466 Michigan Ave., Mobile, Ala., subsidiary of International Paper Co., 100 E. 42nd St., New York, started erecting kraft paper mill to have initial capacity of 200 tons daily; conc., steel, brick; install 2 paper machines, each 236 in. wide, modern design; providing for increasing capacity, 200 to 400 tons daily; power to be supplied from own power plant equipped with boilers having electrical installation of 13,400 h. p.; acquired big timber tract.

Contact Contac

Ga., Atlanta—Kraft-Phenix Cheese Corp., 1075 Sylvan Rd., S. W., Atlanta, and 400 Rush St., Chicago, reported, will erect cheese plant by day labor, 890 Fair St., S. E.; rein. conc., brick, stone trim, comp. roof; 12-12-29

Ga., Macon—Swift & Co., 300 Cherry St., leased site adjoining present property; erect warehouse and refrigeration plant to replace present facilities or erect poultry unit. 3-27

Ky., Carrollton—Consolidated Newspapers, ic., capital \$100,000, chartered; N. A. Perry, res., also Pres., Reading Times, Reading, a.; may acquire number of weekly newspars throughout Kentucky; acquired Carrollon News and arranged to acquire Carrollon Democrat

Ky., Danville—City plans erecting monu-ment, McDowell Park, to Theodore O'Hara, Kentucky poet.

Kentucky poet.

Ky., Lexington—Dixie Bell Dairy, 315 N.
Limsetone St., plans addition.

Ky., Lexington — French Brothers-Bauer
Co., Plum and Canal St., Cincinnati, Ohio,
has \$100,000 dairy under construction, to be
completed within 6 weeks.

Ky., Louisville—Wabash Sanitary Co., sub-diary of Louisville Enamel Products Co., Ky., Louisville—Waunsh Santan, of Louisville Enamel Products Co., 1414 S. 13th St., completing plans for plant, 13th St. and Magnolla Ave., to manufacture porcelain table tops and other steel-porcelain specialties for domestic service: 2 story, costing about \$45,000, including equipment: soon start construction; D. X. Murphy & Bros., Archts., Louisville Trust Bldg. 4-3

Ky., Newport — City Commrs. approved plans for installing traffic signal lights, involving \$19,179 expenditure.

Tex., Waco—Southwest Dairy Products o., Santa Fe Bidg., Dallas, drawing plans and start work in about 30 days on plant osting about \$175,000.

La., Bogalusa—Bogalusa Coca Cola Bottling Co., L. R. Mills, Mgr., let contract in few days for bottling plant: 2 story, rein. conc., steel, brick, stone trim, rein. conc. foundation, built-up comp. and tile roof, conc., tile and wood floors, plate glass, sheet metal work, steel sash, steel and iron work, millwork; elevator to be let under separate contract; following estimating on general contract: Cogwill & LeBlanc: W. F. Krone, both Bogalusa; Dye & Mullins, Columbia, Miss,

La., Shreveport—Dickson Ice Cream Co., 1601 Marshall St., erect \$25,000 to \$30,000 building. Marshall St.; 1 story, brick; site acquired.

La., Independence—Anzalone Construction & Supply Co., Inc., capital \$20,000, chartered; Dominick Anzalone.

La., Shreveport—Blue Ribbon Creameries, 3307 Oakland St., Dallas, Tex., let contract to Strubbe-McConnell, 3415 Velva St., Shreveport, at \$26,725, for creamery, Claiborne Ave.; Flint & Broad, Archts., Melba Bldg., Dallas, Tex.; Seymour Van Os, Asso. Archt., Merchants Bldg., Shreveport. 4-17

Md. Baltimore—Cloverland Farms Dairy, I. B. Kemp. 1910 Windsor Ave., started erecting \$25,000 ice plant, Windsor Ave.: 1 story, brick: Stanislaus Russell, Archt., 11 E. Lexington St.: Louis Ulman, Gen. Contr., 4109 Forest Park Ave.

Miss., Lau. G. Brush. Miss., Laurel—Laurel Milk Products, Inc., A. G. Brush. 747 Seventh Ave., newly or-ganized, completing plans for \$25,000 milk products plant, First Ave. 5-1 Miss., Brookhaven—Brookhaven Creamery Co., subsidiary of Cloverland Dairy Co., 3400 Carrollton Ave., New Orleans, La., erecting cold-storage plant and installing boiler.

Mo., Jefferson City—Commercial Laundry Corp., capital \$18,000, incorporated; E. B Sloan, Attie A. St. George.

Mo., Kansas City—Long Hall Laundry Co., 1701 Woodland St., acquired site and prob-ably start work in summer erecting addition to plant.

Mo.. St. Louis—Highway Materials Co., capital \$35,000, incorporated; Alfred T. Brown, 6308 San Bonita St.

Mo.. St. Louis—Drapery Mfg. Co.. 714 Washington Ave.. capital \$20,000, incorporated; Fannye Roberts, Herman Sachs; manufacture draperies, curtains, etc. See Want Section—Machinery and Supplies.

Section—Machinery and Supplies.

Mo., St. Louis—Theodore Mussey, 1614 Big
Bend St., started erecting \$50,000 building,
Olive Blvd. and Compton Ave.; 73x100 ft.,
2 story, terra cotta with brick spandrels,
fireproof throughout, metal trim, sprinkler
system; Paramount-Lasky Corp., Lessee, 2721
Washington St.; Otto J. Krieg, Archt., Wainwright Bldz.

wright Bldg.

N. C., Greensboro — Director of Vick Chemical Co., Lunsford Richardson, Pres., Greensboro, and Philadelphia, Pa., approved proposal for merer with Drug, Incc., A. H. Diebold, Pres., 41 E. 42nd St., New York; Vick stockholders to receive, for each share of stock held, 57/100 shares of Drug, Inc., and 26-1/3 cents per share in cash; plan of merger contemplates expansion through development and introduction of other products; W. Y. Prey, First V.-Pres., Vick Chemical Co. will have chearge of expansion program; special meeting of stockholders of Vick called for May 26, in Philadelphia, for ratification of reorganization plan.

N. C., Southern Pines—Mid-South Build-

N. C., Southern Pines—Mid-South Building Corp., capital \$25,000, incorporated; R. A. Olmsied, E. H. Lorenson.
N. C., Williamston—Columbian Peanut Co., Southern Produce Bldg., Norfolk, Va., acquired plant site, Washington St. Extension; drawing plans and soon start construction.
Okla., Tulsa—Allied Construction & En-

orawing plans and soon start construction.
Okla., Tulsa—Allied Construction & Engineering Co., capital \$50.000, incorporated;
Frank E. Richardson, 604 Natl. Bank of Commerce Bidg.; construction and engineering on pipe lines, oil refineries and gasoline plants.

plants.

Tenn., Alcoa—A. G. Heins Co., 124 Heins St., Knoxville, reported, has contract for laying approx. 39,000 sq. ft. built-up roofing for buildings of Aluminum Co. of America. Oliver Bildg., Pittsburgh, Pa. 2-20

Tenn., Athens—Fred E. Wankan acquired Post-Athenian, newspaper.

Tenn., Fayetteville—Stanley Rule & Level Co., New Britain, Conn., acquired machinery of Cummins Mfg. Co., and of Bryson Mfg. & Printing Co., and leased buildings of Cummins Mfg. Co.; manufacture yardsticks, gasoline gauges, paint paddles, rulers, etc.; W. G. Cowan, Fayetteville, to manage plant. Tenn., Knoxville—Star Laundry, Victor

W. G. Cowan, Fayetteville, to manage plant. Tenn... Knoxville — Star Laundry, Victor Sellaz. Mgr.. Clinch Ave. and Henley St., installing equipment to double capacity of plant, Henley St. side later to be remodeled for new main entrance; improvements to cost \$25,000; artistic entrance about 30 ft. wide with double doors and marque on new Henley, with large electric sign, entrance and sign costing \$7000; installing boiler to increase power, 200 to 350 h. p., and 5000-gal. automatic hot water tank.

Tenn.. Knoxville — City taking bids for

Tenn.. Knoxville — City taking bids for installing system of syncronized electric traffic signals on Henley St.; \$10,000 appropriation available.

Tenn.. Lafayette—Calvin Gregor, Pleasant Shade, acquired interest of J. B. Freeman in Macon County Times.

Tenn. Murfreesboro—Clark Dairy Products o. Inc., Riley Clark, Gen. Mgr., 220 Mur-eesboro Bank and Trust Co. Bldg., let con-act to Bell Bros., Murfreesboro, for \$15,000 rst unit of dairy plant; started construc-

tion.

Tex., Austin—Tom Miller, 301 W. Fourth St., and associates organizing firm to bid on lease of proposed municipal slaughtering plant: \$28.000 capital stock already subscribed: plans complete; M. L. Diver. Engr., Calcasieu Bldg.. San Antonio; Hugo F. Kuehne, Archt., Littlefield Bldg., Austin, 4-24

Tex., Dalhart—Chamber of Commerce and Carlton Clinton, of Public Relations Dept., of West Texas Utilities Co., operating Dalhart Public Service Co., interested in establishing meat packing plant.

Tex., Dallas—See Ice and Cold Storage

Tex..' Dallas — Texas Publication House, nc., Travis Campbell, Pres., 2500 McKinney

St., acquired printing interest of R. C. Dyer & Co., 1900 N. St. Paul St.; Roland Howell, of R. C. Dyer & Co., becomes V.-Pres. and Asst. Mgr. of Texas Publication House, Inc.

Tex., Fort Worth—Uneeda Towel & Linen Supply Co., capital \$25,000, incorporated; M. Anderson, 1120 Penn St.

Anderson, 1120 Penn St.

Tex., Fort Worth—City Council let contract to Gamewell Company, Practerian Bldg., at \$71,174 for fire alarm equipment.

Tex., Houston—Wackman Welded Ware Co., 1617 Silver St., started erecting addition to plant by day labor; 1 story, 60x100 ft., brick, conc. foundation; Haden Co., 1720 Shepherd St., has contract for brick.

Tex., Houston—Aviation, Food Mar. Co.

Tex., Houston—Aviation Food Mfg. Co., manufacturers of salad dressing and blended maple syrup, let contract to Thomas H. Hallam, 3406 Live Oak St., for \$25,000 plant, 919. Elysian St.; 1 story, 48x80 ft., brick, hollow tile. hollow

Tex., Jacksonville—E. F. Tilley, Palestine establish steam laundry, W. Larrissa St., within 90 days; soon start construction.

Tex., San Antonio—Jasmin Garment Fac-rry, Inc., Louise Jasmin, Alamo Place and rockett St., formed to manufacture wash resses and pajamas.

Tex., San Antonio—San Antonio Poultry Egg Co., capital \$35,000, incorporated; E., Thompson, 524 Hays St.

Va., Coeburn—Coeburn Nehi Bottling Co. cc., capital \$25,000, chartered; H. I. Thorne

Va., Richmond—York Coca-Cola Bottling Works, Inc., capital \$250,000, chartered; James E. Crass, 1801 W. Marshal 1St.

Va., Lynchburg—Quality Dairy Products, Inc., capital \$25,000, chartered: J. E. Wright, 523 Harrison St., leased building, Fifth and Harrison Sts., and let contract for portion of equipment. Harrison Sts. of equipment.

W. Va.. Paw Paw—United States Leather Co., 2 Park Ave., New York, rebuild two units of tannery at once, burned with \$100,000.

W. Va., Piedmont—Chamber of Commerce considering plans for erecting shirt plant.

Motor Bus Lines and Terminals

Ala. Decatur—Liles & Skaggs, M. O. Liles, 1556 N. 20th St., Birmingham, applied to Alabama Public Service Comsn., Montgomery, for permission to establish intrastate freight line to Alabama points between Decatur and Mississippi state line on interstate route linking Birmingham and Memphis.

Ala., Fairhope—Over State Transportation Co., Inc., C. E. Shriver, Mgr., will purchase 2 16-passenger buses. See Want Section—Machinery and Supplies. 5-1
Ga., Macon—Grey Hound Lines, Inc., 355 Cherry St., plans erecting bus terminal at site of present terminal.

Mo., Harrisonville—Crown Coach Co., capi-1 \$90,000, incorporated; Charles L. Brown, oward H. Morgan.

Howard H. Morgan.

Tex., Laredo—Southland Greyhound Lines, Inc., Union Bus Terminal, San Antonio, let contract to H. B. Zachry Co. for \$50,000 terminal, Farragut and Juarez St.; 100x110 ft., hollow tile, stucco, Spanish type; include waiting room, offices, coffee shop, barber shop, tailor shop, rest rooms, etc.; razing present structures; Dielman & Levy, Archts., of Southland Greyhound Lines, Inc.

Tox. Polestina, Missouri, Pacific, Traxe.

Southland Greyhound Lines, Inc.

Tex., Palestine—Missouri Pacific Transportation Co., subsidiary of Missouri Pacific R. R. Co., L. W. Baldwin, Pres., St. Louis, Mo., authorized by Railroad Comsn., Austin, to acquire and operate Bee Line Coaches, Palestine to Jacksonville via Neches and from Jacksonville to Marshall via Henderson; reported, plans operating bus service from St. Louis, Mo., to Monterrey, Mexico.

Tex., San Antonio—Missouri Pacific R. R. Co., L. W. Baldwin, Pres., St. Louis, Mo., authorized by Texas Railroad Comsn., Austin, to establish line of motor trucks for handling freight between San Antonio and Laredo, 155 mi.; operate on highway paralleling company's line; other motor truck lines to be established in state.

Tex., Huntsville — Arrow Motor Freight

Tex., Huntsville — Arrow Motor Freight Lines, Inc., capital \$42,000, chartered; R. W. Miller, Gabe Smither.

Va., Virginia Beach—Neptune Line, Inc., C. W. Vellines, Mgr., Norfolk, authorized by State Corporation Comsn., Raleigh, N. C., to operate bus line, Virginia Beach to Kitty Hawk, N. C.

Hawk, N. C.

W. Va., Clarksburg—West Virginia Transportation Co., Joseph Z. Terrell, Gen. Mgr., Clarksburg, subsidiary of Baltimore & Ohio R. R., Baltimore, announced addition of motor coach line, Clarksburg to Charleston via Sutton and Elk River, improved service, Clarksburg to Parkersburg and Clarksburg to Grafton.

Railways

Ga., Sandersville—Oconee & Deepstep R. R. Co. formed here with E. N. Ennis, Oconee; W. H. Veal, Deepstep; L. U. Campbell, Sandersville; D. F. McCormick, Macon, and associates to operate from Oconee on line of Central of Georgia Ry. Co. in Washington County, and run in northerly general direction through Washington County to point adjacent to properties of American Industrial Clays, Inc., approx. 3 mi. from Deepstep.

La., Shreveport—Louisiana & Arkansas Ry.
Co., W. F. Wright, Pur. Agt., advises ordered 300 box and 200 automobile cars from General American Car Corp., 230 S. Clark St., Chicago, Ill.; 40 ft. steel underframe, single sheathed, 40 ton. (Recently incorrectly noted ordered 500 tank cars from that firm.)

1. **Inc. **Application**

1. **Inc. **Inc

firm.)

Virginia — Richmond, Fredericksburg & Potomac R. R. Co., E. M. Hastings, Ch. Engr., Richmond, advises regarding construction of extensions and additions to 5 passing sidings involving \$102,000 expenditure, and constructing electro-pneumatic interlocking plant to replace existing mechanical plant, all work covered by these 2 projects will be done by company's forces with exception of installing interlocking plant, contract for which has not been let or bids requested, probably not to be undertaken before June or July; grading work for side track extensions to be done by local contractors but no contracts have been let.

Va., Alleghany — See Miscellaneous Con-

Va., Alleghany - See Miscellaneous Con-

Mo., St. Louis — American Refrigerator Transit Co., H. B. Kooser, Pres. and Gen. Mgr., Missouri Pacific Bldg., advises let con-tract to Mt. Vernon Car Mfg. Co., Mt. Ver-non, Ill., for 1000 refrigerator cars a ap-prox. \$3,400,000.

Mo.. St. Louis—St. Louis-San Francisco Ry., R. A. Uhr, Ch. Signal Engr., ordered materials for installing automatic block signals on line between St. Louis and Cape Girardeau, single track, from Union Switch & Signal Co., Swissvale, Pa.; semaphore, style S.

Tennessee-See Coal Mines and Coke

Tennessee—See Coal Mines and Uoke Ovens.

Tex., San Antonio—Missouri-Kansas-Texas R. R. Co., G. E. Scott, Pur. Agt., St. Louis, Mo., ordered 11 color-light signals and other material for use in extending automatic block signaling in this vicinity, from Union Switch & Signal Co., Swissvale, Pa.

Mo., Birmingham—Chicago, Rock Island & Gulf Ry. Co., subsidiary of Chicago, Rock Island & Pacific Ry. Co., W. H. Peterson, Ch. Engr., Chicago, Ill., reported, let contract to Winston Bros. Co., Minneapolis, Minn., for section 4, 7 mi. of joint double-track line with Chicago, Milwaukee, St. Paul & Pacific R. R. Co., C. F. Loweth, Ch. Engr., Chicago, Ill.; let contract to Peterson, Shirley & Gunther, Omaha, Neb., for Sections 6 and 7 between Mosely and Birmingham, Mo., about 13 mi. joint double track, contract includes 1,500,000 cu. yd. earth and about 200,000 cu. yd. rock excavation; bids in for conc. and bridge work on Sections 6 and 7 involving placing 7000 cu. yd. concrete.

Okla., Felt—Atchison, Topeka & Santa Fe

Okla, Felt—Atchison, Topeka & Santa Fe
Ry., G. W. Harris, Ch. Engr., Chicago, Ill.,
reported, authorized by Interstate Commerce Comsn., Washington, to lay new line,
Felt, 142 mi., to connect with main line,
Colmor, N. M.; 110 mi. in New Mexico, 31
in Oklahoma. 10-31-29

in Oklahoma.

Tex., Amarillo—Atchison, Topeka & Santa Fe Ry., G. W. Harris, Ch. Engr., Chicago, reported, authorized by Interstate Commerce Comsn., Washington, to construct 330 mi. new track, 220 mi. to be mail line between Amarillo and Las Animas, Col. Comsn. held in abeyance action on proposed branch line from Spearman to connect with new route at Dumas.

Tex., Vega.—Chicago, Book, Jeland & Do. 24-29

branch line from Speakass.

Tex., Vega—Chicago, Rock Island & Pacific Ry. Co., W. H. Peterson, Ch. Engr., Chicago, Ill., authorized by Interstate Commerce Comsn., Washington, to construct line between Vega, Oldham County, Texas, and Forrest, Quay County, N. M., 76 mi.; 50 ml. in Texas to be constructed by Chicago, Rock Island & Gulf Ry. Co., a subsidiary.

W. Va., Wheeling—Baltimore & Ohio R. R. W. S. Galloway, Pur. Agt., Baltimore, Md., ordered 50 tons strue. steel from McClintic-Marshall Co., Oliver Bldg., Pittsburgh, Pa., for automatic color position light signal system between Glenwood and Wheeling and between North Lima and Toledo, Ohio.

Railway Shops and Terminals

Mo., Kansas City—Chicago, Rock Island & Pacific Ry. Co., W. H. Peterson, Ch. Engr.,

Chicago, Ill., advises regarding remodeling yard, "Work will probably be handled en-tirely by railway company forces, and we shall not ask for any bids." 5-1

Roads, Streets and Paving

In connection with LAND DEVELOP-MENT large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Ala., Birmingham—City Comsn. authorized repaving with 2½-in. sheet asphalt on 6-in. conc. base, and widening to 60 ft., Twenteth St., Eighth to Tenth Ave., South; estimated cost \$32,000; A. J. Hawkins, City Phor.

Gadsden-City receives bids May 14 Ala., Gadsden-City receives bids May 14 for 58,962 sq. yd. conc. paving; 10,486 ft. integral curb, 7,451 ft. curb and gutter; 5,173 sq. yd. sidewalks; estimated cost \$132,389; Percy Todd, City Engr.

Percy Todd, City Engr.

Ala., Mobile—Mobile County Bd. of Revenue, receives bids about Aug. 15, for 8 mi. conc., Cedar Point road, from Dog River to Bay Boosters Club, estimated cost \$150,000; John R. Peavy, County Highway Engr.

Ark., Camden—State Highway Dept., Little Rock, plans letting contract for grading Camden-Rosston Highway, Ouachita and Nevada Counties; C. S. Christian, State Highway Engr.

Ark., Fayetteville — City, Dist. No. 42, Home Jackson, Clk., receives bids soon to grade, drain, curb, gutter and pave 3 blocks South School St.; Emmett Ratcliff, City Engr.

Ark., Little Rock — Street Committee of City Council approved plan to pave Thir-teenth St., with duraco, from High to Mar-shall St.

shall St.

Ark., Magnolia—Bd. of Commrs., Street Improvement Dist. No. 6, completed plans to grade, drain, curb, gutter and pave 4 streets adjoining courthouse square, etc., estimated cost \$27,500; Commrs. of Street Improvement Dist. No. 7 completed plans for improving West Main St., estimated cost \$23,000; Commrs. of Annex No. 1, Street Improvement Dist. No. 7, plan improving Union St., cost \$10,000; E. T. Archer & Co., Engrs., 609 New England Bldg., Kansas City, Mo.

Arkansas—State Highway Comsn., Little

Union St., cost \$10,000; E. T. Archer & Co., Engrs., 609 New England Bldg., Kansas City, Mo.

Arkausas—State Highway Comsn., Little Rock, receives bids May 14 for 6 roads and 4 bridges: Monroe County—10 mi. grading, draining, Highway No. 70. De Valls Bluff-Wheatley road, 196,586 cu. yd. excavation and borrow, 32,662 lb. rein. steel; Lawrence County—6 mi. conc. State Highway No. 67, Hoxie-Alicia road, 6000 cu. yd. borrow, 65,028 sq. yd. grading, subgrade and shoulders, 65,042 sq. yd. conc. paving; Crittenden County—1¼ mi. conc., Forrest City-West Memphis road, State Highway No. 70, 14,527 sq. yd. grading, subgrade and shoulders, 14,546 sq. yd. conc. paving, 40,714 lb. rein. steel; Van Buren County—6 mi. crushed stone surface, State Highway No. 16, Shirley-Edgemont road, 6192 cu. yd. crushed stone surface, State Highway No. 16, Shirley-Edgemont-Van Buren County—1½ mi. crushed stone surface, State Highway No. 16. Edgemont-Van Buren County line road, 4443 cu. yd. crushed stone surface course; Cleburne County—1½ mi. crushed stone surface, State Highway No. 45. Fayetteville-Prairie Grove road. 7620 cu. yd. borrow, 11,991 cu. yd. crushed stone surface course; Calhoun County—11½ mi. crushed stone surface, State Highway No. 45. Fayetteville-Prairie Grove road. 7620 cu. yd. borrow, 11,991 cu. yd. crushed stone surface course; Calhoun County—878 lin. ft. rein. conc. deck girder bridges on conc. pile bents over Ouachita River and bottoms, Hampton-Calion road. State Highway No. 115, consisting of 3 bridges, one each 316,141 and 421 ft. long, 218,923 lb. rein. steel; Van Buren County—227-ft. bridge over Weaver Creek and 673 lin. ft. earth approaches thereto on Shirley-Edgemont road, State Highway No. 16; 40-ft. I-beam span on conc. bents and treated timber framed bent approaches, conc. floor; C. S. Christian, State Highway Engr.

S. Christian, State Highway Engr.

Fla., DeLand—Volusia County Commrs., receive bids May 15 for hard-surfacing roads on peninsula south of Daytona Beach: From Ponce Park approach to ocean, across peninsula to river, and connecting road to lighthouse; double drive from east end of Port Orange Bridge to Ocean Shore Blvd.; both roads 15-ft. wide.

Fla., Jacksonville—City Comsn., M. W. Bishop, Sec., received low bid from Robert G. Lassiter Co., Barnett Bldg., at \$10,057 to pave Adams St.; at \$30,734. to pave Broad St.; from W. J. Bryson Construction Co., 14th St., at \$27,686 to pave Liberty St.; at \$26,393 to pave Ninth St.; W. E. Sheddan, City Engr.

Fla., Palm Beach—Town Planning Comsn. approved plans for 100-ft. right of way for section of Palm Beach Ave., from Wells Road to Country Club.

Georgia — State Highway Bd., Atlanta, plans letting contract within next 60 days to complete paving 24.2 ml. highway between Atlanta and Asheville, through Gainesville and Cornelia; receives bids May 22 to pave road between Lula and Baldwin, estimated cost \$225,000; within 60 days more will let contract to pave remaining portion of Gainesville to Lula road; W. R. Neel, State Highway Engr.

Ga., Atlanta — State Highway Bd., Atlanta, plans paving within few weeks Atlanta-Chattanooga route; plans paving Lafayette spur from Lafayette to Fort Oglethorpe.

Ga., Hamilton—State Highway Bd., Atlanta, receives bids May 22 for paving 16½ mi. Harris County section of Columbia-Atlanta road, from Muscogee County line to north side of Pine Mountain; W. R. Neel, State Highway Engr.

Kentucky —State Highway Comsn., Frankfort, received low bids for 7 roads: Casey County—6.590 mi. grading, draining, Liberty-Somerset road, M. P. Smith Construction Co., Knoxville, Tenn., \$90.878; Boone County—6.525 mi. 20-ft. rein. conc. surface, Florence-Warsaw road, Alex. Dunn Construction Co., Corbin, Ky., \$158,699; Gallatin County—9.587 mi. 20-ft. rein. conc. surface, Warsaw-Florence road, Louis des Cognets Co., \$238,712; 15.112 mi. 20-ft. rein. conc. surface, Warsaw-Florence road, Louis des Cognets Co., \$398,811; Oldham County—13.630 mi. 20-ft. rein. conc. surface, Louisville-Bedford road, Gorrell, Barrow & Kirkpatrick, Russellville, \$353,688; 28,956 mi. 20-ft. rein. conc. surface, Louisville-Bedford road, Gorrell, Barrow & Kirkpatrick, Russellville, \$35,688; 28,956 mi. 20-ft. rein. conc. surface, Louisville-Bedford road, Gorrell, Barrow, Kirkpatrick, Sef47,956; H. D. Palmore, Ky., Louisville—City, Bd. of Public Works,

Ky., Louisville—City, Bd. of Public Works, plans letting contracts before middle of May for 10 streets in various sections of city, including Woodbourne, Delor, Ashland Ave.; Herman, Ash. Dumesnil St.; cost about \$150,000; A. A. Krieger, City Engr.

Ky., Lexington — City considering widen-g Limestone St., 50 to 60 ft., Barr to

Ky., Outwood—Dir. of U. S. Veterans Bureau, Construction Div., L. M. Tripp, Ch., Arlington Bldg., Washington, receives bids June 3 for building and resurfacing roads at Veterans' Hospital, Outwood.

Louisiana—Louisiana Highway Comsn., Baton Rouge, receives bids May 27 for 5 mi. gravel, Archie-Center Point Highway, Route 471, Catahoula and LaSalle Parishes; H. B. Henderlite, State Highway Engr.

Louisiana—Louisiana Highway Comsn., Batonisiana—Louisiana—Highway Comsn., Batonisiana—Louisiana—Louisiana—Rage Parishes State Highway Comsn., Batonisiana—Loui

Henderlite, State Highway Engr.
Louisiana—Louisiana Highway Comsn., Baton Rouge, receives bids May 13 to furnish gravel and build 2 roads: Rapides Parish—11.16 mi. conc., Moreland-Meeker Highway; West Carroll Parish—5.1 mi. gravel, Oak Grove-Mer Reuge Highway.

La., Mansura—Town, Mayor and Bd. of Aldermen, receive bids May 27 for cement sidewalks on various streets.

Mayvind, State Peode Compn. Religiores

La., Mansura—Town, Mayor and Bd. of Aldermen, receive bids May 27 for cement sidewalks on various streets.

Maryland—State Roads Comsn., Baltimore, received low bids for 9 roads, 3 bridges and jetties: Allegany County—1.67 ml. conc. shoulders, Moscow to Barton, Cumberland Construction Co., Cumberland, \$22,422; 4.68 ml. conc., McCool to Westernport, Roberts Paving Co., Salisbury, \$134,358: Charles County—1.01 ml. gravel, Mason Springs-Pisgah road, end of Cont. Ch. 66 to Pisgah, Pembroke-Gasparovic, Park Hall, \$6613; 2.9 ml. conc. shoulders, Mattawoman-Waldorf road, end of Ch. 51 to Waldorf, Southern Maryland Construction Co., Baltimore, \$20,-235; Kent County—36 ml. conc. with slag shoulders, Betterton-Stillpond road toward Lloyd Creek, Old Line Construction Co., Chestertown, \$6072; St. Mary's County—67 ml. gravel, from Valley Lee road through Drayden; 51 ml. from end of Cont. Sm-37 through St. Georges Island, H. W. Hewitt & Sons, Valley Lee, Md., \$9189; Queen Anne's County—1.05 ml. conc., end of Cont. Q-46, near Price, toward Bridgetown, P. D. Philips & Bros., Salisbury, \$17,402; Worcester County—41 ml. conc., covering modification of curves at two R. R. crossings on Berlin-Selbyville road, Hannaman-Burrough Co., \$22,452; timber jetties at Ocean City, one at North First St. and one at North Fourteenth St., W. W. Truitt, Lincoln City, Del., \$9600; Carroll County—substructure, conc. floor, etc., on bridge on National Pike east of Ridgeville, over tracks of B. & O. R. R., Forbes-Murphy Construction

Co., Baltimore, \$95,366; Allegany County—conc. girder bridge over Jennings Run, Corriganville, on road from Cumberland to Mt. Savage, Geo. F. Hazelwood, Cumberland, \$14,-477; conc. girder bridge, over George's Creek, Moscow Mills, on road from Lonaconing to Westernport, Cumberland Construction Co., \$12,641; G. Clinton Uhl, Chmn. 4-17, 4-10

\$12,641; G. Clinton Uhl, Chmn. 4-17, 4-10

Maryland—State Roads Comsn., Baltimore, receives bids May 13 for 5 roads: Baltimore City—1.2 mi. sheet asphalt, Caton Ave., Wilkens Ave. to Washington Blvd., Cont. BC-87-72; Dorchester County—1 mi. conc., Finchville-Reliance road, end of Cont. D-48 toward Reliance, Cont. D-57-12; Frederick County—2 mi. conc., Johnsonville-Union Bridge road, end of Cont. F-99 to conc. near Union Bridge, Cont. F-148-52; Queen Anne's County—1-4 mi. conc., Centreville-Wye Mills road toward Starr, Cont. Q-42-22; St. Mary's County—1 mi. gravel, end of Cont. SM-42 at Hermansville, south, Cont. SM-60-84.

Md., Baltimore—City, Bd. of Awards, received low bid from J. A. Lavezza Sons, 911 Easton Ave., \$20,943, for paving alleys in Cont. No. 139; from T. M. Construction Co., 16 N. Front St., at \$30,754, for paving footways in Cont. No. 116; Nathan L. Smith, Highways Engr.

Md., Baltimore—City, Bd. of Estimates authorized paying 6 avenues, including Beau-fort, Belvieu, Litchfield, etc., at estimated cost of \$28,000; Nathan L. Smith, Highways

Md., Baltimore—City, Bd. of Awards, re-ives bids May 14 to grade, curb and pave ith cement conc., streets in Cont. No. 553, 0000 sq. yd.; Nathan L. Smith, Highways

Engr.

Mississippi—State Highway Comsn., Jackson, receives bids May 13 for 2 roads and bridges: Lafayette County—1.581 ml. Section "C", Oxford-West road, part of State Trunk road, between Oxford and Sardis, 29,-613 cu. yd. excavation and borrow, 11,230 lb. rein. steel; 11,636 f. b. m. creosoted lumber, in bridges; Washington County—connecting road from Federal Aid Project No. 59-A to Ferry Landing, 4,300 cu. yd. borrow excaavtion; G. A. Draper, State Highway Engr.

Miss., Holly Springs—City, Mayor and Bd. of Aldermen receive bids May 16 for 2900 cu. yd. excavation, 5380 sq. yd. conc. paving, 3050 lin. ft. combined curb and gutter, drains, etc.

Mo., Clayton—City, Wm. H. Koch, Clk., receives bids May 13 for sidewalks on North and South Road, Brentwood.

and South Road, Brentwood.

Mo., Clayton—St. Louis County receives bids May 14 to improve Gratiot, Ladue, Lorraine, Hunter roads and East Place; Roy Jablonsky, Highway Engr.

Mo., Clayton—St. Louis County Court will let contract about Aug. 1 for about 5 ml. 20-ft. conc. slab paving on Page Bivd., from Pennsylvania Ave. to new State Highway No. 77; Roy Jablonsky, Highway Engr.

Miss., Laurel—City Commrs. receive bids May 12 to reseal about 30,000 sq. yd. old wood block pavement; Paul C. Klyce, City Engr.

wood block pavement; Paul C. Klyce, City Engr.

Mo., Kansas City — City, Bd. of Public Works. Matthew S. Murray, Dir., received low bids totaling \$111,109, for resurfacing 2 streets with asphaltic conc. or vitrified brick; 8-in. conc. pavement and curbing on 7 streets; sidewalks, grading and sewers on 8 streets; Midwest Paving Co., 25th and Summit Sts.; Halpin-Dwyer Construction Co., Railway Exchange Bidg.; John Pilarski. 6032 Tracy St.; Weaver Construction Co.; Frank Filinn Construction Co., 85th and McGhee St.; T. P. Thomson; Hoover Brothers Construction Co., 1300 E. 18th St.; Charles Gidinsky. 4341 Benton Blyd.; F. C. Clarkson, 3613 Morrell St.; H. A. Williams, 325 S. Oakley St.; Missouri Sidewalk Co., 400 Hall St.

Mo., Richmond Heights, St. Louis—City plans receiving bids soon to improve Moorlands Dr. and St. Albans St.; Beard Engineering Co.; recently rejected bids.

Mo., St. Joseph—City, Bd. of Public Works.

Mo., St. Joseph—City, Bd. of Public Works, considering resurfacing Mitchell Ave., Fifteenth to Twenty-second St.; Charles T. Miller, City Engr. teenth to Twen

ler, City Engr.

Mo., St. Louis—City, Bd. of Public Service, received low bid from Chase Construction Co., \$120,559, for about 3/2 ml. recut granite block paving on Broadway, Wabash R. R. tracks to Hall's Ferry road; from Asphalt Paving Co., 1328 Sublette St., \$36,475, to pave Russell Place with asphalt. McDonald to Tholozan Ave.; W. W. Horner, ity Engr.

Mo., St. Louis—Bd. of Public Service approved plans to rebuild and partial widen about 3 ml. roadway of Broadway from Howard St. to entrance to O'Fallon Park, south of Athlone Ave.; re-laying crescent granite block; cost about \$540,000; Widen

from 50 to 56 ft.. Howard to Dock St. and from Gano to O'Fallon Park; plans re-building Broadway from Morrin Ave. to Halls Ferry road, cost \$350,000.

Mo., St. Louis—City, Bd. of Public Service, receives bids May 20 to rebuild Broadway, Kennerly, Seventeenth, Sullivan, Greer and Channing St.; Cupples Place; improving Hancock St.; W. W. Horner, City Engr.

and Channing St.; Cupples Place; improving Hancock St.; W. W. Horner, City Engr.

North Carolina—State Highway Comsn., Raleigh, received low bids for 8 roads and 22 bridges, totaling about \$1,227,000: Dare County—10.70 mi. sand asphalt, Kitty Hawk toward Manteo, Robert G. Lassiter Co., Citizens Bank Bldg., Raleigh, \$158,502; gravel, less stone, Ritter & Booker, Seaboard Bank Bldg., Norfolk, Va., \$52,143; Cumberland County—4.25 mi. paving, Route 53, Fayette-ville to Manchester, F. J. McGuire, Washington, N. C., \$74,496; structures, H. H. Sherrill, 464 Carolina Circle, Winston-Salem, \$11,934; Franklin-Granville Counties — 14.54 mi. top-soil, Route 56, Franklinton to Creedmoor, C. A. Ragland, Louisburg, \$76,745; Montgomery County—30.07 mi. conc., Route 74, Moore County line to Biscoe, George R. Martin, Salisbury, \$74,038; Gaston County—3.80 mi. top-soil, Route 275, Dallas to Route 20 near Bessemer City, R. C. Stevens, 20 College St., Asheville, \$28,804; structures, A. L. Berry, Hickory, \$16,620; Surry County—14.50 mi. sand-clay surface, Route 67, Pilot Mountain to Fairview, C. A. Ragland, \$23,-126; less cost of stone, same bidder, \$17,707 Pasquotank and Cadmen Counties—bridge with 100 ft. draw, across Pasquotank River, at Elizabeth City, Atlantic Bridge Co., bridge over Neuse River, Kinston, Kike & Yount, Reidsville, \$118,788; 1.54 mi. approaches, F. J. McGuire, \$26,476; John D. Waldrop, State Highway Engr.

Oklahoma — State Highway Comsn., Oklahoma City, received low bid for roads and

Waldrop, State Highway Engr. 4-17
Oklahoma — State Highway Comsn., Oklahoma City, received low bid for roads and bridges in 3 counties: Osage-Washington Counties—7.564 mi. grading, draining, State Highway No. 25, west from Bartlesville; Hamilton Construction Co., Osage; Garrett Construction Co., Muskoge, \$57.421; E. G. Fike, 2531 E. Independent St., \$24.190; Pushmataha County—8.3 mi. grading, draining, U. S. Highway No. 271, S. E. Evans, 1400 N. 18th St., Fort Smith, Ark., \$32.585; Cole & Jones, Fayetteville, Ark., \$38.736; Roberts & Fisher, Norman, \$35,232; A. R. Losh, State Highway Engr.

& Fisher, Norman, \$35,232; A. R. Losh, State Highway Engr.

South Carolina—State Highway Dept., Columbia, receives bids May 20 for 20 conc. roads, totaling 275 mi.: Chesterfield County—20 mi., Route 1, Kershaw County line to Patrick: Orangeburg County—20 mi. Route 2, Orangeburg to Dorchester County line: Calhoun County—15 mi. Route 2, Lexington County line toward St. Matthews: Spartanburg Larue Counties—23 mi. Route 10, Spartanburg to Ora; Pickens County—7 mi. Route 14, Pickens to Liberty: Abbeville County—16 mi. Route 20, Abbeville to Donalds; Fairfield County—14 mi. Route 21. Chester County line to Winnsboro; Laurens County—8 mi. Route 25, Princeton to Wares Shoals; Greenwood County—1 mi. Route 25. Kirksey to Edgefield County—1 mi. Route 25. Kirksey to Edgefield County—1 mi. Route 25. Kirksey to Edgefield County—1 mi. Route 28, Allendale County—1 mi. Route 28, Allendale to Hampton County—1 mi. Route 28, Allendale to Hampton County—1 mi. Route 28, Allendale County—14 mi. Route 29, Cowpens to Thicketty; Darlington County—14 mi. Route 35, Darlington to Hartsville: Dillon County—3 mi. Route 38, Latta to Marion County—3 mi. Route 26 mi. Route 43, McCormick Counties—15 mi. Route 43, McCormick Counties—15 mi. Route 43, McCormick Counties—15 mi. Route 43, McCormick to Route 25; Sumter County—7 mi. Route 21, Pee Dee to Sellers: total cost \$7,000,000: Charles H. Moorefield, Ch. Highway Engr.

Moorefield, Ch. Highway Engr.

South Carolina—State Highway Comsn.,
Columbia, plans letting contract in May for
3 roads and bridge: Orangeburg County—
hard surface over 20 mi. conc., Route No.
2, from city of Orangeburg, through Bowman
to Dorchester County line; Route No. 3,
from near Swansea. Lexington County, to
Barnwell County line; prohably build Route
No. 78; bridge over Edisto River between
Bamberg and Branchville; plans letting contracts later to pave 3 roads: Calhoun County—
Route 2, from Lexington County line
oend of present pavement: Bamberg County—road from Bamberg to Branchville; Dorchester County—Route 30, St. George to Walterhoro; Charles H. Moorefield, Ch. Highway
Engr.

South Carolina—State Highway Comsn., Columbia, receives bids May 20 for paving Route 30 between Bishopville and Sumter; C. E. Jones, Chmn.

South Carolina — State Highway Comsn., Columbia, approved plans for expending \$15,-000,000 for hard surfacing 46 roads, bids opened in May.

opened in May.

Tenn., Chattanooga — City, Roger Crox.
Commr., receives bids May 16 for Riverview road from Frazer and Barton Ave. to Chattanooga Golf and Country Club.

Tenn., Knoxville—Knox County Highway Comsn. authorized survey for widening Island Home road and Burnett Creek road, south of Knoxville.

Tonn. Nachville—Dopt. of Highways and

Tenn., Nashville—Dept. of Highways and Public Works, Nashville, let contract May 23 for 1½ mi. grading, draining, sarfacing, widening Harding Road, State Highway No. 1, between Wilson Blvd. and Belle Meade Blvd.; paving 4.6 mi. Highway No. 14 from Raines Ave., Memphis, to Mississippi State line; T. E. McEwen, State Highway Engr.

Raines Ave., Memphis, to Mississippi State line; T. E. McEwen, State Highway Engr.

Tex., Athens—Henderson County, A. B. Coker, Judge, plans 520 ml. grading, draining, Highway No. 31, from end of pavement on West Corsicana St. to Federal Aid Project No. 575-E; S. J. Treadway, Res. Engr.

Texas—State Highway Comsn., Austin, appropriated funds for 4 roads and 2 underpasses: Medina County—13.4 ml. graveling shoulders, Highway No. 2, Atascosa County line to Frio County line; estimated cost \$15,750; H. P. Stockton, Jr., Div. Engr., San Antonio; Bexar County—8.4 ml. graveling shoulders, Highway No. 16, Salado Creek to Wilson County line, estimated cost \$6,600; H. P. Stockton, Jr., Div. Engr.; Bell County—1 ml. grading, conc. culverts, Highway No. 2, from Salado north, eliminate 3 conc. dips, estimated cost \$9,620; E. C. Woodward, Div. Engr., Waco; Cass and Morris Counties—19.3 ml. regraveling Highway No. 77, Douglasville to Naples, estimated cost \$27,400; J. D. Metcalfe, Div. Engr., Paris; Navarro County—conc. and steel underpass, Highway No. 31, across Trinity and Brazos Valley Ry., at Corsicana, estimated cost \$34,000; Freestone County—steel and conc. underpass, Highway No. 32, on Trinity and Brazos Valley Ry. at Streetman, estimated cost \$36,000; M. B. Hodges, Res. Engr.; Gibb Gilchrist, State Highway, G. G. Wickline, Bridge Engr.

Texas—State Highway Comsn., Austin, receives bids May 19 or 20 for 4 roads: Mitchell

Bridge Engr.

Texas—State Highway Comsn., Austin, receives bids May 19 or 20 for 4 roads: Mitchell County—14.994 mi. rein. conc., Highway No. 1, from point east of Colorado to Westbrook; 5.002 ml. triple bit. surface course on stone base paving, from point east of Colorado to Nolan County line; .04 ml. rein. conc., Highway No. 1; S. C. Dougherty, Res. Engr., Sweetwater; Navarro County—7.007 ml. rein. conc., Highway No. 32, Richland to Freestone County line; J. W. Alger, Res. Engr.; Gibb Gilchrist, State Highway Engr.

Engr.; Gibb Glichrist, State Highway Engr.
Texas—State Highway Comsn., appropriated funds for road and underpass: Reeves County—51.8 mi. grading, draining, Highway No. 17, Pecos to New Mexico State line, estimated cost \$219,000; Freestone County—steel and conc. underpass Highway No. 7, under Trinity and Brazos Valley Ry. tracks near Teague, estimated cost \$18,000; Mack B. Hodges, Res. Engr., Teague; Gibb Gilchrist, State Highway Engr.
Texas—State Highway Comsn., Austin, ap-

near Teague, estimated cost \$18,000; Mack B. Hodges, Res. Engr., Teague; Gibb Gilchrist, State Highway Engr.

Texas—State Highway Comsn., Austin. apportioned \$1.162,051 toward road and bridge projects in 27 counties; Gibb Gilchrist, State Highway Engr.

Texas—State Highway Comsn., Austin, appropriated funds toward road building in 6 counties and for bridge: Ellis County—5.4 mi. double bit. surface treatment, Highway No. 68, Midlothian to Dallas County line, estimated cost \$14,000; Clifton Rice, Div. Engr., Dallas; Anderson County—8.4 mi. rein. conc., Highway No. 43. Palestine to Tucker, estimated cost \$218,000; C. H. Kendall, Res. Engr.; Wharton County—14.9 mi. grading, draining, Highway No. 71, El Campo to Colorado County line, estimated cost \$93,000; J. M. Nagle, Jr., Res. Engr.; Wise County—11.2 ml. reshouldering and double bit. surface treatment, Highway 39, from point south of Cisco to Jack County line, estimated cost \$31,800; John Mead, Div. Engr., Fort Worth; Grayson County—8 mi. grading, draining, Highway No. 78-A. Whitewright to Collin County line, estimated cost \$57,200; W. D. Dockery, Res. Engr.; Hall County—3.5 mi. grading, draining, triple bit. surface treatment, Highway No. 86, Turkey to Briscoe County line, estimated cost \$30.500; A. D. Hutchinson, Res. Engr., Estelline; Harrison-Marion Counties—repair 800-ft. bridge across Cypress Creek, Highway No. 8, estimated cost \$13,300; Gibb Gilchrist, State Highway Engr.

Tex., Brownsville—State Highway Comsn., Austin, will let contract in May for paving Point Isabel road, Cameron County, G. W. Grant, Judge, contemplates Highways No. 21, 36 and 102 through county.

Tex., Cameron — Milam County, Jeff T. Kemp, Judge, plans 1.373 mi. grading, draining, Highway No. 43, Williamson County line to Federal Aid Project No. 494-B; A. F. Mitchell, Res. Engr.

Tex., Crockett—Houston County, Leroy L. Moore, Judge, plans permanent type pavement Highway No. 19, through county; will receive bids soon.

Tex., Dallas — Dallas County Commrs. Court, Charles E. Gross, Auditor, receives bids May 19 for Forney Ave. road, from White Rock Creek intersection of Buckner Blvd.; Rollins & Clinger, Dist. Engrs.

Tex., Dickens—Dickens County, O. C. Newberry, Judge, plans 9.835 ml. gravel surface course, Highway No. 18. Dickens to Spur, estimated cost \$33,180; J. S. Harrison, Res.

Tex., Fairfield—Freestone County, P. O. French, Judge, plans 3.082 mi. grading, draining, rein. conc. Highway No. 7, Tengue to connect with Federal Aid Project No. 462; Mack B. Hodges, Res. Engr., Teague.

Tex., Franklin—Robertson County, Joe Y. McNutt, Judge, plans 17.513 ml. grading, Highway No. 43, end of Federal Aid Project No. 44 to Leon County line; C. B. Thames, Res. Engr., Hearne.

Tex. ,Gonzales — State Highway Comsn. Austin, make survey for 17 ml. Highway No 3-A, from Waelder to Caldwell County line.

Tex., Gonzales — State Highway Comsn., D. M. Love, Judge, plans 7.756 mi. grading, draining, Highway No. 45, Walker County line to Point Blank, estimated cost \$96,800; D. K. Caldwell, Res. Engr., Tyler.

Tex., Houston — City. W. E. Montelth, Mayor, plans receiving bids to pave Yale St. from Washington to Twenty-second St.; considering opening and paving Travis St.; G. L. Fugate, Acting City Engr.

Tex., Jacksboro—Jack County, H. C. Mc-Clure, Judge, plans 11.043 mi. grading, draining, Highway No. 34, Wise County line to intersect Highway No. 25; L. C. McCanlies, Res. Engr., Fort Worth.

Tex., Madisonville—State Highway Comsn., Austin, plans letting contract soon to grade 7 mi. gap in Highway No. 90, Madison County.

Tex., Perryton—City plans about 37 blocks street paving in residence section; Mont-gomery & Ward, Engrs., Harvey-Snider Bldg., Wichita Falls. 4-3

Tex., Beaumont—City, Paul H. Millard, Mgr., considering paving 3 streets in South Park, including Elgle, Corley and Emmett St.; R. C. Black, City Engr.

Tex., Beaumont—Jefferson County. B. B. Johnson, County Judge, and State Highway Comsn., Austin, plan expending \$150,000 to pave College St. extension, from Avenue D to Amelia.

Tex., Beeville—Bee County considering expending \$325.000 for road building in Dist. No. 1. including hard surfaced highway east to Refugio County line and west to Live Oak County line. See Financial News Columns.

Tex., Brownsville—Cameron County Commrs. Court, Oscar C. Dancy, County Judge, considering expending \$350.00 for highway from Brownsville to Boca Chica. See Financial News Columns.

cial News Columns.

Tex., Fort Worth—Tarrant Count, Damon A. Davis, Engr., and State Highway Dept., Austin, making location survey of 22 mi. 20-ft. wide conc., Mansfield-Cardinal or Highway No. 24, from city limits to county line; State Highway Comsn., probably let contract in May to grade and drain, 9 mi. Keller Cardinal, from junction with Highway No. 121, west of Birdville, to Keller.

Tex. Canyon—Randall County, Compression of the contract of the contrac

Tex., Canyon — Randall County Commrs., W. E. Bennett, Commr., plan hard surfacing 16.5 mi. Highway No. 9, from Canyon. south to county line; 15.5 mi. Highway No. 33, from Canyon west to county line or 2 mi. west of Umbarger; caliche base, double inverted penetration asphalt topping.

Tex. Gonzales—State Highway Dept. Aug.

Tex., Gonzales—State Highway Dept., Austin, making survey of 15-mi, gap on Houston-San Antonio Highway, in Gonzales County; Gibb Gilchrist, State Highway Engr.

Commrs.,

ty; Gibb Gilchrist, State Highway Engr.
Tex., Dallas—Dallas County Commrs.,
Charles E. Gross, County Auditor. receive
bids May 29 for surface treating Belt Line
No. 3. Lancaster to De Soto: Meridian road
from De Soto to Dist. line; Bonnie Vlew road
connections; Rollins & Clinger, Dist. Engrs.
Tex., Fairfield — State Highway Comsn.,
Austin, plans letting contract soon for conc.
work on Highway No. 32, from Fairfield to
Leon County line; for 4 ml. Highway No.
14, connecting with new pavement of Lime
stone and Navarro Counties: for small strip
of Highway No. 43, from Trinity River to

Leon County line, near Buffalo; Gibb Gilchrist, State Highway Engr.

Tex., Houston — City, W. E. Monteith, Mayor, considering paving 35 ft. wide Bissonette St. from Green Briar Dr. to Kirby Dr.; Acting City Engr., G. L. Fugate prepared plans.

Tex., Houston — State Highway Comsn., Austin, probably receive bids soon for 7.8 mi. grading, draining, Highway No. 73, between State Aid Project No. 800-A and State Aid Project No. 800-C, Harris County; A. J. Wise, Res. Engr.

Tex., Kountze—Hardin County considering expending \$2,000,000 for road work. See Financial News Columns.

Tex., Kountze — State Highway Comsn., Austin, appropriated funds toward reshelling and asphalt topping 13 mi. Highway No. 40. Hardin County, from point northeast of Voth to Kountze, plans shelling 12 mi. Highway No. 40 beyond Kountze; work probably start in 2 weeks; Gibb Gilchrist, State Highway Engr.

Tex., Kaufman — Kaufman County, Chas. Ashworth, Judge, plans 1.64 mi. grading. draining, Highway No. 15, from end of pavement east of Forney to west city limits of Forney, estimated cost \$34,800; Willie F. Pass, Res. Engr., Terrell.

Tex., Kerrville—Kerr County, Lee Wallace, Judge, plans 10.679 ml. compacted crusher run caliche surface course, Highway No. 41, Station 617 plus 00. east to Mountain Home, estimated cost \$72,800; G. M. Jowers, Res. Engr.

M. Jowers, Res. Engr.

Tex., Memphis—Hall County, A. C. Hoffman, Judge, plans 3.509 mi. grading, draining, 9-in. compacted gravel base course, 21-ft. wide, with triple bit. surface treatment 20-ft. wide, Highway No. 86, from Briscoe County line to Turkey, estimated cost \$61,000; N. A. Ivie, Res. Engr.

Tex., Odessa — Ector County, D. Vance Swann, Judge, plans 17.045 mi. grading, draining, triple bit. treatment surface course on 9-in. compacted caliche base course, Highway from Odessa to Andrews County line, estimated cost \$206,000; G. R. Abney, Res. Engr.

Tex., Richmond—Fort Bend County. F. X. Joerger, Judge, Rosenberg, plans 4.583 ml. grading, draining and 4.563 ml. rein. conc. 20-ft. wide Highway No. 36, Rosenberg to Pleak School; esstimated cost \$134,700; Bert Hedick, Res. Engr.

Tex., San Angelo—City, E. E. Lowrie, Mgr., plans expending about \$30,000 to pave Main St. and lay storm sewer, from Harris to Koberlin; plans widening Twentieth St. Chadbourne to Oakes; W. C. Youngs, City

Tex., Sinton—San Patriclo County, J. C. Houts, Judge, plans 9.985 ml. 1-ln. two course limestone rock asphalt surface course, on 10½-in. compacted caliche base course, 20-ft. wide, Highway No. 128, Angelina to Sinton; Fred M. Percival, Res. Engr., Rock-

Tex., Sweetwater—Nolan County. Chas. W. Lewis, Judge, plans 4.033 ml. grading, draining rein. conc., Highway No. 70. Sweetwater to Fisher County line; S. C. Dougherty, Res.

Tex., Vernon — Wilbarger County, J. V. Townsend, Judge, plans 20.982 mi. grading, draining, Highway No. 25, form point south of Vernon to Baylor County line; Jno. B. Nabors, Res. Engr.

Tex., Victoria — Victoria County, J Woodhouse, Judge, plans 7.455 ml. g ing. draining, Highway No. 29, Da C to Victoria; D. K. Shepard, Res. Engr.

Virginia—State Highway Comsn., Richmond, received low bids for 3 roads and 2 bridges: Southampton County—9.6 mi. gravel, Route 52, Zuni to Southampton County—10.6 mi. gravel, Route 52, Zuni to Southampton County—10.7 mi. gravel, Route 52, Prince George County—10.7 mi. gravel, Route 52, Prince George County—11. Gravel, Route 52, Prince George County—11. Gravel, Route 52, Prince George County—12. mi. macad., Route 38, Roanoke County—12. mi. macad., Route 38, Roanoke County—12. mi. macad., Route 38, Roanoke, north, Pendleton Construction Co., Wytheville; Giles County—234-ft. over East River, Route 23, near Glen Lyn. Aley Construction Co., Inc., Bristol; 1.003-ft. over New River, Route 23, near Glen Lyn. A. N. Campbell & Co. Inc., Peoples National Bank Bidg., Lynchburg; total cost over \$480,000; C. S. Mullen, Ch. Engr. 4-17

Virginia—State Highway Dept., Richmond, plans surface treating road connecting Hopewell with Richmond-Petersburg turnpike; C. S. Mullen, Ch. Engr.
West Virginia—State Road Comsn., Charleston, receives bids May 27 for 19 roads, 2 bridges and 2 culverts: Monongalia and Wet-

zel Counties—3.6 mi. grading, draining, Cottonwood-Wadestown road; Roane, Calhoun and Gilmer Counties—26 mi. hot mix or retread surface course, Spencer-Arnoldsburg-Normantown road; Wyoming County—4 mi. gravel surface, Oceana - Huff Creek road; Upshur County—10 mi. cement surface, Rock Cave-Cleveland road; Fayette County—5.8 mi. grading, draining, Hico-Camp Lookout road; Ritchie County—10 mi. retread surface course, Harrisville-Smithville road; Nicholas County—12 mi. cold tar surface treatment, Fenwick-Craigsville road; Berkeley County—1.3 mi. amiesite paving, Martinsburg-Hedgesville road; Cabell County—13 mi. conc. and rock asphalt, Barboursville-Culloden road; Wirt County—10 mi. gravel surface, Elizabeth-Creston road; Brooke County—2.2 mi. cement conc. and modified bit. macad., Short Creek-Wellsburg road; Marion County—2.4 mi. grading, draining, Fairmount-Manning road; Tyler County—1.7 mi. grading, Anschutz-Sistersville road; Gilmer County—0.3 mi. bit. macad., Glenville Bridge approaches; Nicholas County—7 mi. grading, gravel surface, through Swiss; Grant County—2.7 mi. grading, draining, Bruceton Mills-Pennsylvania State Line; Randolph County—2.4 mi. cement conc., Burnt Bridge approaches; Greenbrier County—7 mi. grading, bruceton Mills-Pennsylvania State Line; Randolph County—2.4 mi. cement conc., Burnt Bridge approaches; Greenbrier County—7 mi. grading, bit macad. paving Little Clear Creek and Big Clear Creek Bridges approaches; Wetzel and Marshall Counties—½ mi. Dry Run culvert and fills; Kanawha County—23,4 mi. culvert, conc. arch, 20-ft. span; Tyler County — Wells Bridge, conc. arch, two 80-ft. spans; Hardy County—Parsons Ford Bridge, 180-ft. steel through truss, with two 50-ft. 1-beam approach spans, conc. substructure; George E. White, Sec.

W. Va., Wayne—State Road Comsn., Charleston, considering hard-surfacing State

W. Va., Wayne—State Road Comsn., Charleston, considering hard-surfacing State Highway No. 8, HuntingtonWayne road, between Lavelette and Wayne, Wayne County; George E. White, Sec.

Contracts Awarded

Ark., Earle—City let contract to C. L. Gorms, Little Rock, at \$50,000 to pave Main St.

Ga., Columbus—City, Henry B. Crawford, Mgr., let contract to Barlow-Gordy Contracting Co., Garrard Bldg., at \$10,170 to pave with conc., Fourth Ave., Ninth to Twelfth St.

Twelfth St.

La., Baton Rouge—City, Wade H. Bynum, Mayor, let contract to Wm. Thibodaux, 1113 North St., for sidewalks on Main St. and Jackson road; L. M. Voorhies, City Engr.

La., Cheneyville—Town, Mayor and Bd. of Aldermen, let contract to August Amy, Opelousas, \$7800, for conc. paving, curb, gutter on Front St.; conc. sidewalks on Klock St.; O. F. Reiszner, Engr., Barrett Bldg., Alexandria.

Miss. Jackson — City let contracts.

Miss., Jackson — City let contracts for street and sidewalk paving: Merrill Engineering Co., Lamar Bldg., 10,000 sq. yd.; Dunn Construction Co., Lincoln Life Bldg., Birmingham, Ala., 32,000 sq. yd.; Vinson Bros., Hattiesburg, Miss., 1,300 sq. yd.; J. J. Halbert, City Engr.
Oklahoma — State, Highway Companional

Oklahoma — State Highway Comsn., Oklahoma City, let contract to Aspland Construction Co. at \$38,800 to grade and drain 9.7 ml. U. S. Highway No. 64 west from Alva, and to L. S. Fisher, Woodward, \$9639, for bridge, Woods County; A. R. Losh, State Highway Engr. 4.17

Okla., Okarche—E. E. Park, 808 E. Seventeenth St., Oklahoma City, has contract. \$25,674, for grading and paving 2 blocks Main St. 76 ft. wile.

Main St. 76 ft. wile.

Tennessee—Dept. of Highways and Public Works, Nashville, let contract to W. A. Patton, South Pittsburg, Tenn., at \$288,498, for 4.17 mi. grading, draining and 6 conc. deck girder bridges on State Highway No. 76 across Forded Deer Bottom to Bells, Haywood and Crocket Counties.

Tennessee Dept. of Highways and Public

wood and Crocket Counties.

3-27

Tennessee—Dept. of Highways and Public Works, Nashville, let contracts for 3 roads and 2 bridges: Knox County—572 ml. grading approaches to bridge over Tennessee farm, K. V. Johnson, Edgefield, S. C., \$15,088; Cocke County—7485 ml. conc., Highway No. 9, near Newport, Murray Construction Co., 508 Union Ave., Knoxville, \$144,811; Dyer County—9.99 ml. conc. Highway No. 20, Crockett County line to Fowlkes, Hayes Construction Co., Jackson, \$184,396; Cheatham County—356 ml. conc. and steel bridge over Cumberland River, Ashland City, State Highway No. 49, Nashville Bridge Co., foot of Shelby Ave., Nashville, \$292,987; Trousdale County—312 ml. steel and timber bridge over Cumberland River, near Hartsville, Gould Contracting Co., Independent Life Bldg., Nashville, \$155,437; T. E. Mc-Ewen, State Highway Engr.

Tennessee—Dept. of Highways and Public Works, Nashville, let contract to George H. Fisher, Lenoir City, \$216.518, for 8.3 mi. paving, State Highway No. 42, between Cookesville and Monterey; to Simms & Clouts, Ellijay, Ga., \$28.612, for conc. deck girder bridge and approaches, over Wolftever Creek, on 4 ml. State Highway No. 58, between Harrison and Meadow Yiew School; T. E. McEwen, State Highway Engr. 3-27

Tenn., Ashland City—Dept. of Highway and Public Works, Nashville, let contract to Dicus Brothers, Waynesville, N. C., at \$559, 916, for 8.92 mi. grading, draining, Highway No. 49, Cheatham County. of Highways

Tenn., Chattanooga — Dept. of Highways and Public Works, Nashville, let contract to Dicus Bros., Waynesville, N. C., for 9.5 mi. grading, draining, Highway No. 58, Hamilton County, from point near Harrison to Meadow View school.

Tex.. Dallas—City, J. Waddy Tate. Mayor, let contract to H. L. Cannady Co., Santa Fe Bldg., \$50,591, to pave Cole Ave., Knox to Lemmon.

Lemmon.

Tex., Hallettsville—Jos. E. Broussard, 1614
College St., Beaumont, has contract at \$57,213, for 4,800 cu. yd. excavation, 18,100 sq.
yd. pavlng, and 4,800 lin. ft. curbs and gutter; Terrell Bartlett Engineers, Inc., 1412
Smith Young Tower Bldg., San Atnonio. 1-30
Tex., Houston — City, W. E. Monteith,
Mayor, let contract to Brown & Root, Norwood Bldg., Austin, to pave Almeda, from
north of MacGregor Way to Brays Bayou;
G. L. Fugate Acting, City Engr.
Va., Courtland—Pennell & Harley, Mont-

G. L. Fugate Acting, City Engr.

Va., Courtland—Pennell & Harley, Montgomery Bidg., Spartanburg, S. C., have contract to cone. surface 8 mi. Highway 28 east of Franklin toward Highlands, Southhampton County.

W. Va., Charleston — Kanawha County Court let econtract to R. L. Black & Co., Huntington, 876,174, for 6 mi. rading, draining. Cabin Creek road: Conrad M. Ross, County Road Engr.

W. Va., Charleston—Kanawha County

W. Va., Charleston—Kanawha County Court, R. N. Moulton, Clk., let contract to K. E. Reed & Co., Stop 8. South Charleston, \$15.273, to pave approaches to Patrick St. Bridge. Bridge

Bridge,
W. Va., Charleston — Kanawha County
Court let contracts for 5 roads: To J. M.
Cain & Co., Moore Bidg., at \$82,199 for grading Project 167: at \$29,564 for Project 247:
at \$6830 for Project 135; to A. A. Bostic,
131 Guyan St., Huntington, \$11,515 for Project 248; to Venable & Farkas, Morrison
Bidg., \$6508 for Project 134.

Sewer Construction

Sewer construction in LAND DEVELOP-MENT projects involves the expenditure of large sums of money. Under that classifica-tion details of these improvements are re-

Ark.. Mena—Southwestern Sewer Co., 1507 Corinth St., Dallas, Tex., plans improvements to sewer system, recently acquired; extend mains; build disposal plant.

D. C., Washington — P. Ambler, Silver Springs, Md., reported, has contract for 2 sewers.

Ky., Louisville — Commrs. of Sewerage, Woolsey M. Caye, Technical Engr., reported, planning \$1,000,000 Beals branch trunk sewer east of Cherokee Park; construction to begin in the fall.

east of Cherokee Park; construction to begin in the fall.

La., New Orleans—Sewerage and Water Bd. received following low bids for sewer projects: Contr. 209-D, constructing mason, y and lined canal in Orleans Relief canal from Broad St. to Jefferson Davis Parkway, at \$140,000 from W. Horace Williams Co., Inc. 833 Howard Ave.; Contr. 112-D, riveted steel pipe for drainage pumping station No. 2, at \$15,400, from Chicago Bridge & Iron Works, Birmingham, Ala.; Contr. 204-S, pumps, flood gates and check valves for sewerage station D, at \$24,862, to Bessemer Foundry & Machine Works, Bessemer, Ala.; Contr. 205-S, valves and sluice gates for Sta. D at \$27,976, to Chapman Valve Mfg. Co., Neville & Cleary, Union Industries Bldg., New Orleans, Representives; Contr. 103-W 800 kw. Diesel engine driven unit for Stat. C, at \$55,000, to Fulton Iron Works, New Orleans Bank Bldg., contracts for 106-S, 107-S, and Contr. 108-S, not tabulated. 4-17 Md., Baltimore—Bd. of Awards receives blds May 14 for storm drains Sewer Dist. No. C-13, Storm Water Contr. No. 110. See Want Section—Bids Asked.

Mo., Kansas City-See Roads, Streets, Pav-

Mo., Kansas City-City, Matthew S. Murray, Director of Public Works, plans sewer Seventy-fifth St. and Troost Ave.; cost \$10,-

Mo., Luxemburg, Mail St. Louis—W. Stoecker, Engr., and C. E. Jacoby, Conslt. Engr., both 650 E. Big Bend Rd., Webster Groves, reported, preparing preliminary plans for sanitary and storm water sewer in LeMay Perry Sewer Dist.

Mo., St. Louis—Rogan Contg. Co., 2914 Allen Ave., reported, has contract for reconstructing sewer along Broadway in Calvary Cemetery and for sewers in Forest Park.

Cemetery and for sewers in Forest Park.

Tex., Dallas—Pearse, Greeley & Hansen, Engrs., 6 N. Michigan Ave., Chicago, Ill., advises have completed a project report, outlining extensions for sanitary sewerage system, relief for existing surcharged sanitary sewers and projects for sewage disposal; April 1, city voted \$4,000,000 bonds to be used in building new and relief sanitary sewers and construction of sewage disposal works; plans and specifications now in process of development, covering first contracts on sanitary sewerage and sewage disposal project; first of these contracts will include construction of relief sewers and extensions of sanitary sewer system.

Tex. Dallas—City, reported, soon call for

Tex., Dallas—City, reported, soon call for bids for \$113,000 storm sewer to run north-ward from east levee old bed of Trinity

Tex., Houston — City, W. E. Monteith, Mayor, receives bids May 14 for sludge dislodger and concentrator equipment at North Side sewage treatment plant. See Want Section—Bids Asked.

Tex., Fort Worth—Thurber Construction Co., Ft. Worth Bank Bldg., reported, has contract at \$12.466 for storm sewer draining area surrounding proposed T. C. U. Stadium; Purvis & Bertram, Texas Natl. Bank Bldg., at \$5000 for storm sewer on Chenault St.: Ellsworth Long, 1828 Tremont St., at \$5000 for storm sewer on Throckmorton St.

Tex., San Angelo—See Roads, Streets, Paving.

Va., Richmond—City construct sewer and water mains, Delectable Heights; cost \$13,000.

Telephone Systems

Ala., Mobile—Postal Telegraph & Cable Co., 106 Dauphin St., expend approx. \$50,000 improving office.

Ark., Morrilton—Southwestern Bell Telephone Co., E. N. McCall, Dist. Mgr., Little Rock. let contract to J. M. Kohler, Searcy, for \$46,000 exchange, 206 S. East St.; 1 story, 27x49 ft., bungalow type; private plans.

Ark., Nashville—Southwestern Bell Tele-tone Co., W. C. Pennell, Telephone Bldg., . Louis, Mo., soon let contract for tele-lone building; 1 story and basement, 27x41 .; bids in; private plans.

Fla., Indian Town-See Lumber Enter-

Tex., Borger—Southwestern Bell Telephone Co., B. D. Hull, Ch. Engr., Telephone Bldg., Dallas, ordered materials and soon start erecting \$100.000 telephone system: new plant to provide common battery service.

Textile Mills

S. C., Columbia—Parker Press Cloth Co., F. T. Parker, 1800 Green St., reported, plans \$50,000 addition.

S. C., York—W. T. Nims. Burlington, N. C., reported, plans hosiery mill.

Va., Covington—The Christian-Schwarzenberg & Gaede Co., Archts., Union Bldg., Cleveland, O., receiving bids to be opened May 14 for plant Industrial Rayon Corp.; three 1-story buildings and 3 multi-story buildings; total area 375,000 sq. ft.; following contractors estimating: George A. Rutherford Co., Cleveland; O.; Hunkin Conkey Construction Co., Cleveland; John T. Wilson Co., Richmond; John W. Cowper Co., State Planters Bank Bldg., Richmond; D. J. Phipps, Roanoke; Fiske-arter Construction Co., Greenville, S. C., and Golder Construction Co., Philadelphia, Pa.

Va., Martinsville—Martinsville Silk Corp.,

Va., Martinsville—Martinsville Silk Corp., J. Huber, Pres., reported, double capacity plant.

W. Va., Parkersburg—John P. Pettyjohn & Co., 212 8th St., Lynchburg, Va., advises that Unit No. 2 of plant for Viscose Co., Marcus Hook, Pa., is 50% complete; following are subcontractors; McClintic-Marshall Co., Oliver Bldg., Pittsburgh, Pa., for

struc. steel; S. J. Creswell Iron Works, 23d and Cherry Sts., Philadelphia, Pa., for misc. iron work; H. H. Ward Co., Chester, Pa., for roofing, sheet metal work, skylight construction, etc.; Hoober & Null Co., 1629 Race St., Philadelphia, Pa., for painting and glazing; Walter W. Muench, 2134 Cherry St., Philadelphia, Pa., for plumbing and drainage; Cellized Floors, Inc., Crozer Bidg., Philadelphia, Pa., for cellized floors; McArthur Brick Co., McArthur, O., for brick; Adams, Payne & Gleaves, Jefferson St., Roanoke, Va., for lumber. azing; Phila-

Water Works

Details of water works improvements in connection with the many LAND DEVELOP-MENT operations will be found under that classification.

Ark., Hughes—City, H. O. Harrison, Sec., plans \$70,000 water works improvements, including 50,000 gal. tank, 100,000 gal. reservoir; deep well about 1700 ft.; water lines and sewer lines and septic tank; install pumping plant; will receive bids subject to sale of bonds; Thomas H. Allen, Engr., Front and McCall Sts., Memphis, Tenn.

Ark., Morrillton—S. G. Davles, reported, has contract for water tank foundation for Arkansas Power & Light Co., Pine Bluff; Pittsburgh-Des Moines Steel Co., Praetorian Bldg., Dallas. Tex., for water tank; John Patton & Son, Morrilton, for water mains; cost \$50,000.

\$50,000.

Ga., Dalton—Townsend Lumber Co., N. Towers St., Anderson, S. C., reported, has contract for filtration plant, including filter building, filter equipment, cogaulating basin, etc.; R. D. Cole Mfg. Co., Newnan, has contract for wash water tank in connection with filtration plant; Wiedeman and Singleton, Inc., Engrs., 1404 Candler Bldg., Atlanta.

3-20

La., Thibodaux—J. B. McCrary Co., Citizens and Southern Bank Bldg., Atlanta, Ga., reported, low bidder for water plant. 4-17

Md., Curtis Bay, Baltimore—Bd. of Awards seelves bids May 14 to furnish and erect teel tank at Curtis Bay. See Want Section -Bids Asked. 5-1

Miss., Ackerman—Town, defeated \$15,000 water bonds.

Miss., Corinth—City, L. D. Hale, Water Plant Supt., reported, extend water system to West Corinth.

to West Corinth.

Miss., Hattiesburg—City has plans for proposed water works plant on Boule River; plans include installing 14 deep wells, aerator, filtration plant and reservoir with capacity of 15,000,000 gal. daily; Thomas H. Allen, Engr., 65 McCall St., Memphis, Tenn.

2-13

Miss., Laurel—City receives blds May 12 for water well system; work includes drilling 700 g.p.m. capacity well, installing pumps, etc. See Want Section—Bids Asked.

pumps, etc. See Want Section—Bids Asked.
N. C.. Charlotte—Cochran & Ross, 601 W.
Sixth St., reported, has contract at \$24,000
for water line.
N. C., Charlotte—Lynchburg Foundry Co.,
Peoples Natl. Bank Bldg., Lynchburg, has
contract at \$103,963 for pipe for water
works; Grinnell Co., 30 E. Fourth St., at
\$6410 for gate valves.
N. C., High Point—City, C. A. York, receives bids May 27 for elevated steel tank
and tower. See Want Section—Bids Asked.
Okla., Oklahoma City—City, E. M. Fry.

Okla, Oklahoma City—City, E. M. Fry, City Mgr., advises relative to impounding reservoir, no definite arrangements made for building or financing same; preliminary surveys have not yet been made.

Tennessee-See Electric Light and Power. Tennessee—See Electric Light and Power.
Tenn., Bruceton—Following have contract
for water works: Distribution system, Geo.
J. Robinson, 2700 Linden Ave., Pine Bluff,
Ark., at \$21,858; tank and tower, PittsburghDes Moines Steel Co., Des Moines, Iowa, at
\$6150; two wells, Carloss Well Co., Fifth
and Gayoso Sts., Memphis, Tenn., at \$8090;
V. V. Long & Co., Consit. Engrs., 420 Bennie
Dillon Bldg., Nashville, Tenn.

Tenn. Camden—I A McCalla Fayette.

Dillon Bldg., Nashville, Tenn.

Tenn., Camden—I. A. McCalla, Fayetteville, reported, making survey for Installation of water works system.

Tenn., Knoxville — Michigan Valve and
Foundry Co., 3631 Parkinson St., Detroit,
Mich., reported, has contract for car load of
gate valves for use in water dept.; National
Cast Iron Pipe Co., Birmingham, Ala., for
3000 ft. of 12-in, water pipe to be used for
extension main along Forest and Western
Aves. to Gay St. from old Fifth St.

Tenn., Livingston—Town, A. F. Offic Mayor, plans water works; votes May on \$50,000 water works bonds.

Tenn., Franklin—City, having plans prepared by Marr & Holman, Archts., Stahman Bldg., Nashville, for supplementary water system, contingent on voting of \$75,000 bonds, in June; E. S. Reynolds, Acting Ch. Engr., has made survey; proposed system will include 2,000,000 gal. reservoir and several miles water mains.

Tex., Denton—City Comsn. authorized purchase of site Cor. Ave. C. and W. Prairie St. and sinking of well and constructing West Denton pumping station; E. N. Noyes, City Planning Engr.

Tex., Houston-City soon call for bids for connecting East End water works site with larger mains to remainder of city's system; install water mains additional streets; received low bid from Southern Engine & Pump Co., for drilling water wells East End water works; plans construction of sewers on McKinney St.

West Virginia.

West Virginia — National Water Works Corp., 11 Broadway, N. Y., advises will expend about \$50,000 in extensions to present plant of Logan Water Co., Logan, and Pure Water Co. of Mount Gay; build 5 mile c. i. water main, steel standpipe and meters; build 2 steel storage tanks 50,000 to 75,000 gal.

W. Va., Fairmont—Bd. of Education, Fairmont Dist., receives bids May 15 for 8-in. water line. See Want Section—Bids Asked.

W. Va., Hurricane—Kanawha Valley Water Co., Belle, reported, applied for franchise to install water system; has systems at Belle, Nitro, Dunbar and St. Albans.

Woodworking Plants

Ga., Macon-Maxwell Bros. Box Co., foot of Poplar St., let contract to W. A. Stillwell & Son, 98 Ingleside Ave., for \$12,000 additions to wooden box manufacturing plant; brick, frame; private plans.

Va., Bassett — Following, reported, have tentative plans for merger: Bassett Furniture Co., J. B. Bassett Furniture Corp., both Bassett, and W. M. Bassett Furniture Corp., Martinsville.

Va., Martinsville-See Bassett.

FIRE DAMAGE

Ala., Goodwater-Singleton Lumber Co.'s plant.

Ala., Troy—J. I. Shaw's store, one mile from Troy on Riba road. Ga., Brunswick—Coastal Cabinet Works; loss \$35,000; Charles V. Cox and associates,

Ga., Hawkinsville — Pulaski Milling Co.'s plant in Watson Bldg.

Ga., Quitman-Grammar School; loss \$75,-

Anchorage—Jos. L. Saylor's residence, e Valley; loss \$15,000, exclusive of fur-Ky.,

Ky., Eminence—Dwelling owned by Wm. Pope, Harlan.

Ky., Glasgow-Sidney Berry's country residence; loss \$10,000.

Ky., Paris—Garages of Joseph M. Hall and W. A. Grimes; Brent Bldg., used as turkey shipping pen, Brent & Co., Inc., owner; total loss \$10,000.

wher; total loss \$10,000.

Ky., Scottsville—Chief of Police E. S. Morgan's building; loss \$40,000; Great Atlantic & Pacific Tea Co.'s store, loss \$7000; City Market, \$4000; Grand Cafe, \$3000; Hanes Grocery, \$4000.

Versailles - McCammish Bros.' dry cleaning plant.

La., Ruple, P. O. Haynesville—High School; loss \$40,000. Address School Bd.

La., Sugartown—Elementary school Bd.

La., Sugartown—Elementary school; loss, \$10,000; D. G. Lunsford, Supt., Beauregard Parish School Bd., DeRidder.

Md., Forest Hill—Barn on farm of J. Henry Cain, Pres., Harford County Bd. of Election Supervisors.

Md., Park Hall—General store, post office and residence of I. V. McKay; loss \$20,000.

Md., Seat Pleasant—F. L. Watkins' general store, lumber shed and postoffice; loss \$150,000.

\$150,000. Miss., Mattison — R. B. Eggleston's residence near Mattison; loss \$15,000.

Miss., Meridan—Bruce Brown's residence 44th Ave. and Paulding St., owned by Lee Jenkins, 3820 10th St.

Mo., Atlanta—Lawrence Atberry & Son's store; Pearl Crawford's store; J. W. Lyda's hardware store; loss \$30,000.

Mo., Kirkwood, St. Louis—Bungalow, 545 ouch Ave., owned by R. H. Craig, 7201 Oakland St.

Mo., Huntsville—Mt. Salem Baptist and Providence Christian Churches near Hunts-ville.

N. C., Montreat — Assembly Inn annex, owned by Mountain Retreat Assn., Albert R. Bauman, Sec.-Treas.; loss \$15,000.

N. C., Siler City—Williams, Brower & Co.'s chair stock plant; Oval Oak Mfg. Co.'s plant.

N. C., Taylorville—George W. Watt's dry goods store; loss \$20,000.

N. C., Wilmington — Residences of Jim Wooden and Miss Emelia Wooden.

Nooden and Miss Emelia Wooden.
Okla., Drummond—Ivan Brown Barber
Shop; S. T. Allen's grocery store; warehouse and store of Ed. Hockaday, Kingsisher; H. C. Mohler Drug Store, Victory
Mercantile Co.'s building; M. W. A. and
I. O. O. F. lodge halls; postoffice; Bank of
Drummond damaged; loss \$125,000.

S. C., Anderson—John W. Ducworth's residence, Greenville Highway between Anderson and Piercetown.

Tenn., Memphis—Shipping house of Pittsburgh Plate Glass Co., Madison Ave. and Lauderdale St.

Tenn., Nashville—Frank M. Bass' residence, Ensworth Ave.; loss \$35,000.

Tenn., Nashville—Business section of Bordeaux, suburban village on Hydes Ferry road, including Buford Brothers Garage. 1520 20th Ave., N.; W. M. Latta's store, New Bridge Road; Squire G. M. Craft's building, containing business firms; H. G. Hill Grocery Store, 500 Second Ave., N.; loss \$40,000.

Tenn., Jefferson City—Southern Ry. Co.'s station, damaged; G. L. Sitton, Ch. Engr., Lines East, M. W. & S., Charlotte, N. C.

Tex., Dalhart — Peeples Furniture Co.'s store; loss \$50,000.

Tex., Pecos—Leader Grocery Co's store; Brack Furniture Co.'s store; Justice Hotel; loss \$200,000.

Tex., Glidden—Glidden Mercantile Co. store owned by W. E. Obenhaus and Mrs. Ethel Hope; loss \$12,000.

Va., Clarendon—Garage and 9 buses of Washington, Virginia & Maryland Coach Co., Leon Arnold, Pres.; \$150,000.

Va., Norfolk — Pier 7, Hampton Roads Naval Operating Base, Capt. W. H. Allen, Public Works Officer; loss, reported, \$400,000.

W. Va., McCorkle—Hotel owned by Winfield Dunlap and W. Walker; store and dwelling owned by M. M. McClure; 3 dwellings owned by W. A. Cabell, Dalmer Dunlap and Glimer Dunlap; loss \$15,000.

W. Va., Paw Paw—Plant of United States Leather Co., 2 Park Ave., New York City; loss \$100,000.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

Fla., Pensacola—American Legion has pre-liminary plans for \$12,000 clubhouse, Barran-cas Ave. and G St.; hollow tile and stucco. 1 story; lay out park in front. 10-31

La., New Orleans—Young Men's Christian Assn., Chas. C. Shedd, Gen. Sec., has low bid at \$337,900 from Gervais F. Favrot, Bal-ter Bldg., for bldg., Lee Circle and St. Charles Ave.; Favrot & Livaudais, Ltd., Archts., Hibernia Bk. Bldg. 4-24

Miss., Leland—Ancient Free and Accepted Masons receive bids until May 15 for brick, stone trim, rein. conc. and steel frame temple; 3 stories, 100x45 ft., struct. steel and iron work, steel sash, sheet metal, tile and marble work, steam heat; Claude H. Lindsley, Archt., Jackson Tower Bldg., Jackson.

Tenn., Knoxville — Benevolent Protective Order of Elks will have plans ready for bids within 3 weeks for \$300,000 clubhouse, Gay St. and Hill Ave.; fireproof, rein. conc., brick, first floor gray stone, 5 stories above street level, 3 below; bowling alleys, swimming pool, 500 to 600 lockers, kitchen, 51 dormitory rooms; Baumann & Baumann, Archts., 813½ Market St.

Bank and Office

Ark., North Little Rock, Little Rock—Twin City Bank, M. L. Altheimer, Pres., having plans drawn by Thompson, Sanders & Ginocchio, Archts., Hall Bldg., for \$25,000 annex; brick, conc., terra cotta, 1 story, 25x140 ft., comp. roof, struct. steel and iron.

D. C., Washington—Pan American Union; \$1,000,000 office bldg.; Paul P. Cret and Albert Kelsey, Archts., both Otis Bldg., Philadelphia, Pa.; probably be several months before project is ready for blds.

Tex., Corpus Christi—Central Power & Light Co., S. M. Udden, Vice Pres.-Gen. Supt., Frost Natl. Bk. Bldg., San Antonio, Tex., advises will not erect \$300,000 office bldg., sa lately reported; however, will erect in 1931 office bldg. for local and dist. offices.

Tex., Dallas—J. W. Crowdus Realty Co., 1711 Santa Fe Bldg., erect 31-story National Bldg., Commerce and Lane Sts.; stone exterior, 31 stories, including 3 in basement for garage, interior corridors of walnut panel with marble to full height of first floor, conditioned air, concealed radiation, carpeted floors; heating and machinery on top floor; Lunch Club on 25th floor; private dining rooms, sales, conference and directors' rooms; Holabird & Root, Archts., 333 N. Michigan Ave., Chicago, Ill.; interior design by Whitson & Roberts; duplicates of above bldg. to be erected in various cities. 4-17

Churches

Ala., Birmingham — Norwood Methodist Episcopal Church, Rev. G. M. Davenport, Pastor, 1225 N. 31st St., considers erecting

Ala., Birmingham—Gospel Alliance Tabernacle erect Evangelistic Tabernacle, site present structure, Sixth Ave., North, near 19th St.; 1 story, 75x140 ft.; auditorium 65 ft. wide, seat 1500; Frank F. Bedford, Archt., 3731 Sixth Ave., S.

Ark., Colt — Methodist Episcopal Church rebuild burned structure.

Ga., Emory University—Emory University, Dr. Harvey W. Cox, Pres., probably soon have plans ready for bids for \$250,000 Glenn Memorial Church, N. Decatur and Oxford Rds., N. E.; Colonial type, fireproof, rein. con., struct. steel. brick, Indiana limestone, hollow tile, interior marble and tile, slate and comp. roof, steam heat, seat about 1500; \$250,000 Sunday school later; Hentz, Adler & Shutze, Archts., Candler Bidg., Atlanta.

Md., Baltimore—Protestant Episcopal Cathedral Foundation, Dr. Arthur Chilton Powell, Sec., Stony Run Lane and University Pkwy., will receive new preliminary estimates within 10 days preparatory to revising plans for unit of proposed cathedral group, Charles St. and University Pkwy.; Frohman, Robb & Little, Archis., 140 Boylston St., Boston, Mass., and 16 Jackson Place, Washington, D. C.

Md., Baltimore—Grace M. E. Church, Dr. B. W. Meeks, Pastor, Roland Ave., and Oakdale, completed negotiations for site, Charles St. and Belvedere Aves. and Croydon Rd., for \$400,000 Gothic type bldg.; Frohman, Robb & Little, Archts., 140 Boylsfon St., Boston, Mass., and 16 Jackson Place, Washington, D. C.; Wm. W. Emmart, Asso. Archt., Union Tr. Bldg., Baltimore; I. Manning Parsons, Chmn., Bldg., Comm., 39 Hopkins Place.

kins Place.

Miss., Meridian—St. Josephs R. C. Church,
Rev. Carl Wolf, Pastor, receives bids until
May 14 at office R. C. Springer, Archt., Robldg.; 1 story and tower, 32x75 ft., reinsenbaum Bldg., for brick and stone trim
conc. foundation, wood floors, steel and iron
work, furnace heat; plans from Mr. Springer.
4-10

Mo., Huntsville—Mt. Salem Baptist Church, near Huntsville, rebuild burned structure.

Mo., Huntsville — Providence Christian Church, near Huntsville rebuild burned struc-

Mo., Poplar Bluff—Methodist Church, C. T. McDaniels, Chmn., Bd. of Trustees, raising funds for \$100,000 church.

Mo., St. Louis—Roman Catholic Church of the Resurrection, Rev. Geo. Dreher, Pastor, let contract to Emil C. Fendler, 6220 Oakland Ave., for fireproof church and school. Hydraulic St. near Meramec St.; brick and rein. conc., 2 stories and basement, 87x141 ft.; Henry P. Hess. Archt., Ambassador Bidg.; plumbing, David C. Cunningham, 2648 Lafayette St.fl.; heating, Heckel Gunn Heating Co., 3685 Olive St.; wiring, G. A. Klutho Electric Co., 214 N. 16th St. 4-24

Okla., Tulsa—First Christian Church, Dr. Claude E. Hill, Pastor, 901 S. Boulder St., selected Smith & Senter, Philtower Bldg., as architects for \$200,000 Sunday school; brick, stone, steel and rein. conc., 4 stories and basement, 100x140 ft.; work probably start in early Fall.

Okla., Oklahoma City — First Baptist Church, Rev. T. L. Holcomb, Pastor, raising \$100,000 for Sunday school building.

\$100,000 for Sunday school building.

Tenn., Memphis—Bellevue Baptist Church, Rev. R. G. Lee, Pastor, will have plans on market in about 1 week for brick, rein. conc. and steel Sunday school and addition to church; 3 stories and 1 story; Sunday school accommodate 2500, 25 to 30 classrooms; Joe T. Wallace, Archt.; Ralph Dippel, Engr. both Bank of Commerce Bldg.

Tex., Del Rio—Oblate Fathers erect \$30.000 church for Mexicans; brick, stone, rein. conc. foundation, steel truss, 1 story, 38x64 ft.; C. L. Monnot, Archt., Perrine Bldg., Oklahoma City, Okla.

Tex., Liberty—Baptist Church, J. M. Rich.

lahoma City, Okla.

Tex., Liberty—Baptist Church, J. M. Rich, Chmn., Bldg. Comm., let contract to I. C. Applewhite, Columbia, Miss., for brick bldg.; 2 stories, 52x92 ft., auditorium seat 378; 2 smith & Daniel, Archts., Perlstein Bldg., Beaumont, Tex.

Tex., San Antonio — Corinth Baptist Church, Dakota and Conoly Sts., opens bids May 15 for brick veneer bldg.; 1 story, balcony and basement, 47x88 ft., rein. conc. basement, wood floors, tar and gravel roof; E. Tanner, Archt., 814 Indiana St.; plumbing, wiring and heating in gen. contract.

W. Va., Richlands-Calvary Church completed excavation for building.

City and County

Ark., Pine Bluff—City selected Mitchell Selligman, 206 Pine St., as architect for \$63,000 public library; Chris L. Wright, City Engr.

Ga., Woodbine—Camden County has low bid from M. M. Jarvis. Kingsland, for jail: Roy A. Benjamin, Archt., 21 N. Ocean St., Jacksonville, Fla.

Okla., Lawton—City, F. E. Lawrence, City Engr., having plans drawn by Guy Dale for \$100,000 fire station.

N. C., Charlotte—City Council plans \$12,-000 fire drill tower; brick and stone, 6 stories, rein. conc. floors; would be financed through bond issue.

S. C., Columbia—Richland County Grand Jury recommends erection of new court-

house.

Tenn., Bruceton—Mayor and Board of Aldermen consider erecting fire station.

Tenn., Charlotte — Dickson County Court House Improvement Comsn. W. R. Hudson. Chmn., opens bids May 22 for remodeling courthouse; add 2 wings; new stairs. cement and terrazzo floors, tile and marble work, elect. work, painting, plumbing, heating; \$35.000; plans from Doughterty & Gardner. Archts., Cotton States Bidg., Nashville.

Tex., Lubbock—Lubbock County, Robt. H. Bean, County Judge, defeated \$250,000 court-house and jall bonds.

Tex., Uvalde—City, Andrew F. Smythe, Mayor, has low bid at \$32,400 from Leaver-ton Bros., Alpine and Marfa, for city hall; Will N. Noonan Co., Archt., Bldrs. Exchange Bldg., San Antonio.

Va. Lynchburg — City Council considers ecting \$25,000 to \$30,000 market at sta-

Va., Radford-City Council plans municipal

W. Va., Wheeling—City Council considers remodeling city hall; \$33,000; would vote on bonds.

Dwellings

Ala., Jacksonville — First Presbyterian Church, Grover C. Currier, Chmn., Bldg. Comm., soon open bids for manse.

Ark., El Dorado—Jesse Calloway ready for bids for brick veneer residence; \$30,000, 2 stories and basement, 45x75 ft., oak and tile floors, tile roof, hot air heat; Hunter & Boyd, Archts., Armstrong Bldg.

D. C., Washington—J. E. Fox, 2701 35th Place, N. W., has permit for 3 brick dwellings, 4521-25 S. Dakota Ave., N. E.; 2 stories; \$15,000.

Fla., Fort Lauderdale—W. L. Stribling, 109 Nottingham Drive, Macon, Ga., reported, plans 3-story residence, Ventone Canal, Ven-ice; third floor for gymnasium.

Fla., Miami—J. C. Wayman erect \$15,000 residence and garage, 6000 Biscayne Blvd.; conc., 2 stories.

Fla., Miami Beach—F. O. VanDern, 729 Lincoln Rd., plans \$25,000 residence, Rivo Alto Island; work probably start in Summer or Fall.

Fla., Miami—W. T. Grant, Jr., 455 Seventh Ave., New York, purchased estate. Silver Bluff, reported plans swimming pool, dance patio, tennis courts and bowling green.

Fla., Miami—C. F. Coombs, Pelham Manor, N. Y., and 50 Pine St., New York City, hav-ing plans drawn by A. DeHaven Zink, Archt. Seybold Bldg., Miami, to remodel and en-large dwelling, 1581 Brickell Ave.; \$15,000.

Fla., Miami Beach—Mrs. Barbara Ring. Arlington, Mass., has low bid at \$12,374 from Fred Howland, 1600 N. W. 14th St., Miami, Fla., for residence; John & Coulton Skinner, Archts., French Village, LeJeune Rd., Coral Gables, Fla.

Ga., Atlanta—Mrs. Florence S. Cannon receives bids May 12 at office R. S. Monday, Archt., Norris bldg., for residence; brick veneer, 1 story and basement, \$0x35 ft., hardwood and tile floors. comp. roof: fellowing contractors estimating: Wagar & Co., Norris Bldg.; Vost Construction Co., Candler Bldg.; Christian & Bell. Red Rock Bldg.; W. P. Francis, 201 Luckie St., N. W.; Brazell & Miller. Norris Bldg.; Norris Construction Co., Rhodes Bldg.; Norris Construction Co., Peters Bldg. Co., Rhodes 161 Spring St Peters Bldg.

Peters Bldg.
Ga., Atlanta—Mr. J. R. Kidder, 26 Peachtree Way, N. E., receives bids May 9 for \$30,000 residence, Argonne Drive. N. E.; brick, conc. footings, 2 stories and basement. 105x48 ft., irregular, Buckingham slate and comp. shingle roof, cement, tile and hardwood floors, Burge & Stevens, Archts. 101 Marietta St.; following contractors estimaling: Gilbert Beers, Bona Allen Bldg.; Norwood Griffin, Bona Allen Bldg.; C. R. Justi. 101 Marietta Bldg.; Christian & Bell, Red Rock Bldg.
Ga., Montroe—R. L. Nowell, erect. native

Ga., Monroe—R. L. Nowell erect native stone residence; 1 story and basement, steam heat; Daniell & Bentell, Archts., Georgia Sav. Bk. Bldg., Atlanta.

La., New Orleans — Geo. E. Brown, Jr., 2228 Gayosa St., have plans ready about 30 days for English type single residence, Lakeview: 1 story.

La. New Orleans — Alex W. Norman, Archt., Maritime Bldg., have plans ready in about 30 days for chapel, Algiers; frame and stucco, 1 story, tile roof.

La., New Orleans—H. Bourgeois, DeSoto Hotel, erect \$10,000 duplex and garages, Vincennes Place near Octavia St.; brick

Md. Baltimore—Chas. C. Sanford. 2911 erwick Ave., erect 6 dwellings and garages, 000 block Oakcrest Ave.; 1½ stories; \$18.

Md., Baltimore — H. Lee Johnson. 1526 Druid Hill Ave., plans Colonial residence, Ridgeway Rd., Graham Place.

Md., Baltimore—A. H. Mitchell. 3414 Forest Park Ave., erect \$30,000 English type residence, Taplow Rd. and Springlake Way; brick; 2½ stories; J. W. Wolcott, Archt., 324 N. Charles St.; drawing revised plans. Md., Baltimore—J. W. Mehling, 22 Light St., erect dwelling, Braxton Rd., Homeland.

Md., Centerville—Wm. R. Ross, Jr., 671 W. 193rd St., New York, purchased 2 tracts totaling 557 acres; erect buildings.

Miss., Meridian—I. W. Merrill, Lamar Life Bidg., has low bid at \$44,700 from J. W. Garrett for residence; J. Frazer Smith, Archt., Goodwyn Inst. Bldg., Memphis. Tenn. Mo., Clayton, St. Louis—B. O. Rhodes, Rwy. Exch. Bldg., St. Louis, erect \$45,000 residence, Upper Ladue Rd.; brick. 2 stories; Jamieson & Spearl, Archts., Arcade Bldg.

Mo., St. Louis—Geo. H. Moore, Atty., erect Colonial residence, 36 Picardy Lane, St. Louis County; Preston J. Bradshaw, Archt., 718 Locust St.

Mo., St. Louis—Frank X. Doerer, care F. G. Avis, Archt., 1021 Big Bend Blvd., erect brick residence, 8020 Clayton Rd., Carthage cut stone, terra cotta, marble work, 2 stories and basement, 31 x 61 ft., hardwood

floors, tile bath, metal lath, Vitrolite wain-scot, slate roof, hot water heat.

Mo., St. Louis—Dr. M. I. Heideman, care erard W. Wolf, Archt., 776 Big Bend lvd., erect brick residence, Hampton Park, stories and basement, 67 x 40 ft.

3 stories and basement, 67 x 40 ft.

Mo., Webster Groves, St. Louis—G. B.
Parsons, Ambassador Bldg., 411 N. Seventh
St., erect \$25,000 residence, Shirley Drive;
brick, 2 stories; Kilpstein & Rathmann,
Archts, Security Tr. Bldg., St. Louis; bids
Mo., Webster Groves, St. Louis—Dr. Jacobsmeyer, care Dan. Mullen, Jr., Archt., 18
N. Meramec St., Clayton, erect frame residience, Sherwood Forest; 2 stories and basement, 36 x 28 ft., tille bath, hardwood floors,
comp. shingle roof, hot 2ir heat.
N. C., Guilford College—H. L. Cannon
considers erecting residence to replace burned structure.

structure.

okla., Bartlesville—V. T. Broaddus erect \$10,000 residence, Cherokee Hills; 2 stories. S. C., Aiken—Sheffleld Phelps remodel residence; Willis Irvin, Archt., S. F. C. Bidg., dence; Willi Augusta, Ga.

Tenn. Clarksville—Wm. Lamp erect brick, stone and conc. residence; 2 stories and basement, 27x66 ft., with 15x15-ft. wing; Tisdale, Stone & Pinson, Archts., Ind. Life Bldg., Nashville; blds in.

Tenn. Knoxville—Jas. VanDeventer. Lyons Bend Road, erect English type residence, brick, 2 stories, slate roof, 8 rooms, steam heat: Baumann & Baumann, Archts., 8131/2 Market St.

Tenn., Knoxville—Thos. McGuire, 503 Winona St., soon start work on residence, Holston Hills: \$12,000 to \$15,000, 2 stories; Leonard M. Dow and Sumner A. Dow, Archts., Brownlow Bldg.

Tenn. Knoxville—John E. Kennedy. 3118
Woodbine Ave., soon start work on residence,
Holston Hills; \$12.000 to \$15.000. 2 stories;
Leonard M. Dow and Sumner A. Dow,
Archts., Brownlow Bldg.

Tenn. Memphis—B. A. Echols, 693 Edith St., erect 4 brick veneer duplexes, 698, 702-06-10 McLemore St.; 8 rooms; \$14,500.

Tenn. Memphis—H. T. Perry erect \$10,000 brick veneer residence, 3629 S. Galloway Drive; 10 rooms.

Drive: 10 rooms.

Tex., Chandler — Pure Oil Co., Goodhue Bidg., Beaumont, Tex., erect 3 dwellings at each of 3 pump stations on line of proposed pipe line extension; stations to be st Van tank farm, one 67 miles from Van and third 74 miles from Smiths Bluff Refinery.

Tex., Fort Worth—R. A. Bristol. Cotton Exchange Bldg., erect \$25.000 residence. 2424 Medford Court; brick veneer, 2 stories, 9 rooms.

Tex., Houston—Lee Barnes erect \$10,000 duplex and garage, 2511 Shepherd Drive; brick veneer, 2 stories, 12 rooms.

Tex., Houston—H. L. Mott, Warwick Hotel apartment, has permit for \$34,000 dwelling, 1920 Woodbury St.; brick veneer, 2 stories, 12 rooms.

Tex., Houston-W. R. Reid, Denver addition, has permit for 4 brick veneer dwellings and garages, 2207-12 Devonshire, 2518 Westgate and 2502 Watson Sts.; 4 and 5 rooms; \$20,000.

Tex., Houston—J. L. Osborne has permit for \$12,000 residence, 2421 Southmore St.; brick veneer, 14 roooms.

Tex.. Houston—River Oaks Corp.. River Oaks Bldg., has permit for \$19.500 dwelling, 2164 Troon St.; brick veneer, 10 rooms.

Tex.. Houston—Woodson Realty Co., 5 Franklin St., has permit for 2 dwellings, 5 Mulford and 4401 Leeland Sts.; brick neer, 5 and 7 rooms.

Tex., Houston—T. M. Howard, 4221 Mc-Kinney St., plans \$10,000 brick veneer resi-dence, Wichita St.

Tex., San Antonio—C. J. LeComte e \$12,500 residence, Octavia St.; 6 rooms.

Va., Warrenton—E. A. Pierce, care Walcott & Work, Archts.. 75 E. Wacker Drive, Chicago, Ill., plans residence, garage, servants' quarters, etc.

Government and State

Ala., Montgomery — State, Bibb Graves. Gov.; Warren. Knight & Davis, Protective Life Bidg., Birmingham, archts. for future building program, advise nothing definite done toward authorizing working drawings on first of new bidgs.: Olmsted Bros., Landscape Archts., Brookline, Mass.

11-14

Ala., Sheffield—Additional contractors estimating on post office, bids May 20 by Treasury Dept., Jas. A. Wetmore, Act.

Supvg. Archt., Washington, D. C.: Batson-Cook Co., West Point, Ga.; A. J. Honeycutt Co., Martin Bldg., Johnson Construction Co., Martin Bldg., both Birmingham, Ala.; Chas. H. Barnes, 512½ Fifth St., Logansport, Ind.; Castor & Castor Construction Co., Inc., 4206 New Utrech Ave., Brooklyn, N. Y. (lately-incorrectly given as Brooklyn, N. C.) 5-1

Ark., Stuttgart—Treasury Dept., Jas. A. Wetmore, Act. Suprg. Archt., Washington, D. C., plans \$90,000 post office; brick and concrete.

crete.

D. C., Washington—District Comsn., Dist. Bidg., Dr. Geo. F. Bowerman, Librarian, has preliminary sketches by A. L. Harris, Municipal Archt., Dist. Bidg., for North-eastern Branch Library; \$150,000 carried in District of Columbia Appropriation Bill beginning July 1; no appropriation available to enlarge Central Library, hope to secure appropriation within 3 to 5 years.

D. G. Weshington, District Comsn. Med. 1

appropriation within 3 to 5 years.

D. C., Washington—District Comsu., Major D. A. Davidson, Engineer Dept., Dist. Bidg., in charge, having plans drawn by Metcalf & Eddy, Engrs. Statler Bldg., Boston, Mass., for \$425,000 incinerator and building No. 1; for \$425,000 inc brick, 1 story.

Ky., Frankfort — State Sinking Fund Comsn., Clell Coleman, State Auditor, plans to engage architect for rebuilding east wing of Old Capital damaged by fire; \$49,000 available.

available.

Ky., Louisville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., erect \$2,500,000 Federal bldg., Broadway from Sixth to Seventh Sts.; Greek type, stone, 4 stories, 420x340x387 ft.; post office on ground floor, court room, internal revenue dept., etc., above.

dept., etc., above.

La., New Orleans—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., reported, may enlarge custom house or erect new structure.

La., New Orleans—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., probably start work in about 4 months on \$1,000,000 quarantine station.

Tex., Center—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C. plans post office to replace burned structure.

Tex., Coleman—Treasury Dept., Jas. A.

Tex., Coleman—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., plans \$100,000 post office.

Va., Buena Vista—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., reported, call for bids May 14, to be opened about June 15, for post office; \$75,000.

va., Lorton—District Commrs., Dist. Bldg., Washington, D. C., has bid at \$30,810 from American Laundry Machinery Co., 989 Sixth Ave., New York, for laundry machinery at District Reformatory.

W. Va., Hinton—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., plans \$100,000 post office.

Hospitals, Sanitariums, Etc.

Ala., Birmingham — Woodlawn Infirmary, Dr. J. H. Stephens, member, 5405 Third Ave., S., repair bldg., install new equipment in outdoor clinics and children's wards; change name to Woodlawn Hospital.

Ark., Hot Springs National Park—Methodist Episcopal Church, Dr. A. C. Miller, Chmn., Hospital Bd. of Little Rock Conference, advises nothing will be done toward erection of sanatorium until General Conference, Dallas, Tex., authorizes establishment

Fla., Jacksonville—Women's Home Missionary Society, Secaucus, N. J.; \$200,000 Brewser Hospital; Ballinger Co., Archts.-Engrs.. 12th and Chestnut Sts., Philadelphia, Pa., advise contract not yet let.

Fla., Ybor City, Tampa—Medical Building Co., Inc., 1915½ Fourteenth St., open bids about May 10 for clinic remodeling; brick and stucco, 2 stories and basement, 50x95 ft., plne, terrazzo and tile floors; Francis J. Kennard & Son, Archts., Citizens Bk. Bldg.; Lyman W. Martin. Asso. Archt.; following contractors invited to bid: G. A. Hanson, Inc., 215 Madison St.; Ricketts & Haworth, Eva and Raymond Sts.; Flagler & Watson, 608 Tampa St.; Geo. T. Taylor, 802 Memorial Highway; Logan Bros, 706 Franklin St.

Ky., Lexington—Good Samaritan Hospital, Limestone St.; fireproof, brick and stone, 4 work within 60 days on \$250,000 addition, Henry L. Ott, member, Bldg. Comm., start stories, 50 beds, chapel; C. F. Reichert, Archt., Starks Bldg., Louisville.

Ky., Louisville—Waverly Hills Sanatorium, 323 E. Chestnut St., plans bldg. for children and bldg. for negroes; \$365,000.
La., New Orleans—Treasury Dept. Jas. A. Wetmore, Act. Supvg. Archt., Washington,

D. C., reported, has completed plans for \$2,000.000 Marine Hospital and soon call for bids; work to start about July 1; 600 beds; main bldg. 5 stories; 3-story administration bldg.; 4-story surgical ward; laundry; power plant; garage; refrigeration plant; quarters for officers and nurses; storage bldg., workshops, etc.; hospital, administration bldg. and mess hall connected. 3-6

Md., Baltimore—Hospital for Women of Maryland, Dr. Edw. H. Richardson, Chmn., Campaign and Bldg. Comm., 9 E. Chase St., raise funds May 16 to May 26 for \$1,500,000 hospital, St. Paul, 34th and Calvert Sts. and University Pkwy.; preliminary plans completed; probably orna. brick, 6 stories, Italian Renaissance type, 3 wings enclosing open court, 2-story entrance, sun parlors on each floor; dispensary and minor operating room, kitchen, refrigerating dept. and storage rooms in basement; Jos. Evans Sperry, Archt., Calvert Bldg.

Archt., Calvert Bldg.

Mo., Excelsior Springs—United States Veterans Bureau, Room 764, Arlington Bldg., Washington, D. C., receives bids in triplicate until June 10 for officers' duplex quarters, Buildings Nos. 23 and 24, U. S. Veterans, Hospital, including roads, walks and grading; work includes excavating, conc., hollow tile, brick work, floor tile, iron work, slate and metal roofing, metal lathing, carpentry, stucco, metal weatherstrips, insect screens, window shades, hardware, plumbing, heating, elect. work and outside sewer, water, steam, gas and elect. distribution systems; drawings from Constr. Div., Room 764.

Mo., St. Louis—St. Louis University Medical School or another Roman Catholic institution will receive bequest of \$435,000 to erect hospital for chronic invalids; to be called Dan and Blanche Bordley Memorial for Chronic Invalids.

called Dan and Bianche Bordiey Memorial for Chronic Invalids.

N. C., Gastonia—North Carolina Orthopaedic Hospital, R. B. Babington, Pres., Babington Heights, erect \$50,000 fireproof ward for colored children; architect not selected.

Okla., Muskogee—United States Veterans Bureau, Room 764, Arlington Bldg., Washington, D. C., receives bids in triplicate until June 10 for utility bldgs., radial brick chimney, water tank, etc., U. S. Veterans Hospital; werk includes excavating, rein. conc. constr., hollow tile, brick work, cast stone, iron work, steel sash, iron and steel stairs, metal stall partitions, asbestos shingle roof, roof ventilators, metal lathing, carpentry, insect screens, hardware, plumbing, heating, elect. work, boiler plant and incinerator and laundry equipment, water softener, steel water tank, radial brick chimney, and outside sewer, water, gas, steam and elect. distribution systems; separate bids for (a) gen. constr., including plumbing, heating, elect. work, boiler plant and incinerator and laundry equipment; (b) water tank; (c) chimney; (d) water softener; drawings from Constr. Div., Room 764.

Tenn., Bolivar—State, Richard H. Lyle, General of Lystitutions soon ready for bids

Tenn., Bolivar—State, Richard H. Lyle, Commr. of Institutions, soon ready for bids for addition, Western State Hospital for Insane; brick, stone and rein. conc., 3 stories and basement, about 400x37 ft., tile floors, tile roof, 400 beds; Wyatt C. Hedrick, Inc., Archt., First Natl. Bk. Bldg., Fort Worth, Tex.

Tex., Galveston—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$506,900 from Ring Construction Co., 95 S. 11th St., Minneapolis, Minn., for Marine Hospital (exclusive of elevator and dumb waiter).

Tex., Rusk—State Bd. of Control, Claude D. Teer, Chmn., Austin, have plans ready about June 1 for \$80,000 ward bldg. and \$35,000 remodeling work on negro ward, State Hospital for Insane; brick and conc., 2 stories; Page Bros.. Archts., Austin Natl. Bk. Bldg., Austin.

Hotels and Apartments

Ark., Hope—John Barlow, reported, erect 6-story, brick, conc. and stone Barlow Hotel. D. C., Washington—H. L. Thornton, 6900 Fourth St., N. W., has permit for \$40,000, 2-story, brick apartment, 415 Butternut St., N. W.

D. C., Washington—Wm. A. Hill, 730 17th St., N. W., erect two 2-story, brick flats, 1115-17 D St., N. E.; \$6500 each.

D. C., Washington—E. M. Willis, Jr., 1405 K St., N. W., has permit for two 2-story brick apartments, 916-18 Evarts St., N. E.; \$16,-000.

Fla., Miami Beach—Mrs. L. E. Johnson, Melrose, Boston, Mass., and Miami Beach, has plans by Robt. A. Taylor, Spanish Vil-

lage, Miami Beach, for 2-story, rein. conc. and conc. block, stucco, 3-apartment, 37th St. and Indian Creek.

Fla., Miami—Harry Rasolsky, Pioneer Hotel, 151 N. E. First St., remodel old building for Kosher Restaurant and office rooms into hotel rooms, erect additions.

Fla., Miami Beach — Ocean Park Apartments, W. H. Bishop, Mgr., 1412 Ocean Drive, remodel building; Henry LaPointe, Archt., Huntington Bldg., Miami.

Mo., Independence—Fred Wallace, Archt., Rialto Bldg., Kansas City, ready for bids for \$350,000, 6-story brick hotel, Maple and Lex-ington Ave. 1-23

Tex., Brownsville — Wm. D. Van Siclen, Owner and Archt., State Natl. Bank Bldg., erect \$20,000, 2-story, 113x24 ft., tile, stucco and rein. conc., Spanish type apartment.

Fla., Orlando—Wyoming Hotel Co., C. De Witt Miller, Pres., Amelia St., has permit for \$10,000 alterations, including enlargement of lobby and dining room and 6 additional rooms and baths.

rooms and baths.

La., Monroe—O. E. Hodge, Ruston, John S. Hunt, Hodge, and C. H. McHenry, Bernhardt Bidg., having plans drawn by Wyatt C. Hedrick, Inc., First Natl. Bank Bidg., Fort Worth, Tex., and ready for bids about June 9 for \$500,000, 10-story, 70x172 ft., 250-room Hotel Frances, Jackson and Harrison Sts.; leased to S. J. Thigpen, Corsicana, Tex., and S. W. Sibley, 1026 Tokalon Drive, Dallas, Tex.

Miss. Graenville, A. V. Allas, Graenv

Miss., Greenville—A. H. Alvis, Walthall Hotel, Jackson, reported, erect \$300,000, 100-room hotel, provided citizens will subscribe \$80,000.

N. C., Asheville—S. A. Lynch Interests, Atlanta Trust Bldg., Atlanta, Ga., plan expending \$200,000 for redecorating, painting and general improvements at Kenilworth Inn and adjoining properties recently acquired.

Tenn., Memphis—A. L. Parker, Pres., Memphis Hotel Co., 149 Union St., recently reported planning athletic club on 2 upper floors of 4-story, 130x145 ft. Hotel Peabody Garage, advises that the company will not get possession of property before fall of 1931; no architect selected.

Tex., Dallas—M. D. Roberts, 6331 Rich.

Tex., Dallas-M. D. Roberts, 6331 Richmond St., has permit for \$10,000, 2-story, brick veneer, 14-room apartment, 6235-37 Richmond St.

Va., Lynchburg — Blue Ridge Apartment and Building Corp. has permit for 20-apartment building.

Va., Portsmouth—Dr. R. R. Robertson, 620 Park Ave., has permit for \$40,000, 3-story, brick 18-apartment.

W. Va., Charleston—J. R. Belknap, Peoples Exchange Bank Bldg., has permit for \$34,000 12-family apartment, 1618 Virginia St.

Miscellaneous

D. C., Washington—Royal Norwegian Legation, care J. J. Whelan, Archt., 1147 Connecticut Ave., soon ready for bids for \$200,000, 3-story, stone Legation Bldg., 34th St. and Massachusetts Ave. 11-21

Fla., Howey-in-the-Hills — Miss Margaret Hoover, 627 Grove St., Evanston, Ill., advises that Club Valencia is far from being ready to build \$500,000 clubhouse. 4.24

Ga., Columbus—T. W. Britton, 3106 Second Ave., soon call for bids for remodeling building, 10th St. and Second Ave., for funeral home; 2 stories and basement, brick and stucco, comp. roof, tile and terrazzo floors, steam heat; chapel to seat 225; Smith & Biggers, Archts., Murrah Bldg.

Biggers, Archts., Murrah Bidg.

La., New Orleans—Sisters of Holy Family, 2428 Gov. Nicholis St., receive bids May 23 at office Theard & Matthews, Archts., Balter Bldg., for \$275,000, 3-story, 257x200 ft., brick, fireproof, limestone trim, Home for Aged, 1900 Lafreniere St.; following contractors estimating: O. M. Gwin Construction and Ave.; J. A. Haase, Jr., 916 Union Ave.; Co., 3503 Fern St.; Caldwell Bros., 816 How-Reimann Construction Co., Maritime Bldg.; J. A. Petty & Sons, Inc., Godchaux Bldg.; Geo. J. Glover Co., Inc., Whitney Bank Bldg.; J. V. & R. T. Burkes, Inc., American Bank Bldg.; A. M. Fromhmerz, Queen and Crescent Bldg.; Gervais F. Favrot, Balter Bldg.; Lionel F. Favret, Louisiana Bldg.; Geary-Oakes Co., Queen and Crescent Bldg.; Chas. Gibert Construction Co., Canal Bank Bldg.; J. A. O'Brien, Louisiana Bldg.; Reilly-Ruckstuhl, Inc., 423 Carondelet St.; Wm. H. Dudley, Stern Bldg., Jackson—Kappa Delta Sorority, Mrs.

Miss., Jackson—Kappa Delta Sorority, Mrs. Daurine Morgan, Chmn., Bldg. Comm., having plans prepared by J. Frazer Smith, Goodwyn Institute Bldg., Memphis, Tenn., for 1-story, brick building; tile roof, hardwood floors.

Mo.. Ferguson — Ferguson Mothers' and Babies' Home of Christian Church, Mrs. D. Stone, Supt., Hartnett Ave. and Darst Road, having plans prepared by Hoener, Baum & Froese, 3605 Laclede Ave., St. Louis, for \$200,000, 3-story brick building.

Tex., Dallas — The Praetorians, remove ird story and remodel building, 2525 Elm.; \$10,000.

Tex.. Cuero—Chamber of Commerce promoting erection tourist hotel and camp on banks of Guadalupe near Cuero.

Va., Tangier—Fox Island Rod and Gun Club on Fox Island erect clubhouse to replace burned structure; 30x100 ft., bungalow.

Va., Hopewell — John Randolph Library Assn., Judge Thomas B. Robertson, Pres., promoting establishment public library.

va., Newport News—Archer M. Huntington, 3 E. 89th St., New York, principal owner of Newport News Shipbuilding and Drydock Co., having plans drawn for marine museum, marine library to house 50,000 volumes, park and testing basin on several hundred acre site on both sides of Watts Creek north of Newport News; cost several million dollars and require several years to complete; creek will be damned at its mouth forming lake which will extend beyond Warwick highway over which state agreed to erect bridge Mr. Huntington advises; "No information available at present."

3-6

Va. Richmond—Old Dutch Market, Edw. C. Schmidt. Mgr., Seventh and Franklin Sts., has been purchased by interests who plan renovating and enlarging.

Railway Stations, Sheds, Etc.

La., Alexandria—Louisiana Public Service Comsn., Farmerville, cited following to appear at hearing in regard to establishing Union Station facilities: Louisiana Railway & Navigation Co., Louisiana & Arkansas, Texas & Pacific, Missouri Pacific, Texas & New Orleans, and Chicago, Rock Island & Pacific railroads.

La., New Orleans—Illinois Central R. R., A. F. Bleass, Ch. Engr., Chicago, plans \$750,-000, 3-story union station on Claiborne Ave.; 200 ft. frontage. 9-12-29

Mo., St. Louis—F. Ringer, Ch. Engr., Missouri-Kansas-Texas Co., recently reported to erect freight office, Broadway and Mullanphy Sts., advises that this is only small undertaking, including partitioning off section of freight wareroom for offices; interior partitions, celling, cement floor, etc.; \$18,000; awarding of contract deferred for short time; A. L. Sparks, Archt., Ry. Exch. Bldg. 5-1

Schools

Ala., Auburn—Alabama Polytechnic Institute, Dr. Bradford Knapp, Pres., plans \$100,000 stadium to seat 12,00 people; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham.

Bldg., Birmingham.

Ala., Gadsden—Bd. of Education, W. T. Murphree, Chmn., erect \$100,000, 2-story. rein. conc., brick and tile addition to high school; 2 wings 70x86 ft., 24 classrooms, 3 study rooms and library; Paul Hofferbert, Archt., Etowah Bk. Bldg.; bids in.

Ala., University—University of Alabama. Shaler Houser, Treas., receives bids May 14 for \$50,000, 3-story and basement, 40x40 ft., brick. struc. steel, stone trim Chemistry Bullding for Metallurgy Dept.; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham.

Ala., Wetumpka — State Training School

Ala., Wetumpka — State Training School plans addition; Dr. J. N. Baker, State Health Officer, Montgomery.

Ark., Barling — Sebastian County School Bd., A. C. Rouser, Supt., Greenwood, plans consolidated Jr. High School at Barling; also having preliminary plans prepared for consolidate high schools at Lavaca, Hartford, Mansfield and Hackett; plans by Architectural Dept., State Bd. of Education, Little Rock.

Ark., Dover—Pope County School Bd., Russellville, erect 8-classroom and auditorium, brick veneer Jr. and High School; plans by Architectural Dept., State Bd. of Education, Little Rock.

Ark., El Dorado—Union County Bd. of Education. J. L. Bond, Supt., erect \$30,000, 1-story, 125x130-ft., 9-classroom and auditorium school in Rural Special School Dist. No. 2; Hunter & Boyd, Archts., Armstrong Bldg.; bids in.

Ark., Hampton-Hampton Special School Dist., R. H. Lyon, Pres., erect \$20,000, 1-story brick school.

Ark., Jenny Lind—Sebastian County Bd. of Education, Walter Houser, Supt., Greenwood, plans \$15,000 brick school.

Ark., Jonesboro—Bd. of Education plans \$20,000 gymnasium to seat 2000 people at Jr. High and Sr. High School.

Ark., Marked Tree—Marked Tree Special chool Dist. erect \$40,000 2-story, brick School Dist. erect and conc. school.

Ark., Monroe—Monroe Special School Dist., B. Cooper, Sec., erect brick, 8-classroom

Ark., Ola—Yell County School Bd. plans \$100,000 brick high school for district consolidation under way; plans by Architectural Dept., Bd. of Education, Little Rock.

Dept., Bd. of Education, Little Rock.

Ark., Russellville—Pope County School Bd.

erect 2-story, 116x61 ft., brick, 17-classroom
junior high school; John P. Almand, Archt.,
Boyle Bldg., Little Rock; bids in.

D. C., Washington—District Commrs., Hon.

L. H. Reichelderfer, Engr. Dept., Room 427,
Dist. Bldg., preparing plans for \$1,500,000,
3-story brick Business High School, 13th and
Upshur Sts.; A. L. Harris, Municipal Archt.,
Dist. Bldg.

Ele. Geipperville.—Floride State Bd. of Cop.

Dist. Bldg.

Fla., Gainesville—Florida State Bd. of Control. P. K. Yonge, Chmn., Carling Hotel, Jacksonville, receives bids May 12 for following buildings: (1) First unit of laboratory building at Everglades Experiment Station near Belle Glade, in Palm Beach County; (2) refrigerating rooms on experiment station grounds at University of Florida, Gainesville; plans obtainable from Rudolph Weaver, Archt., Peabody Hall, Gainesville.

Fla., St. Augustine—Florida State Bd. of

Fla., St. Augustine—Florida State Bd. of Control, P. K. Yonge, Chmn., Carling Hotel, Jacksonville, receives bids May 12 for extension of dining hall and auditorium at Florida School for Deaf and Blind; plans from Rudolph Weaver, Archt., Peabody Hall, Gainesville. Gainesville.

Gainesville.

Fla., Tampa—Hillsborough County Bd. of Public Instruction, W. D. F. Saipes, Supt., selected Frank A. Winn, 207½ Twiggs St., to prepare plans for \$21,000, 5-classroom, brick school in Lake Magdalene School Dist. to replace recently burned structure.

Ga., Blue Ridge—Bd. of Education, Wm. Butts, Chmn., erect 1-story and basement, brick veneer school; comp. roof, hardwood floors; Lockwood & Poundstone, Archts., Marietta Bldg., Atlanta.

Ga., Griffin—Spaulding County Bd. of Edu-

Marietta Bldg., Atlanta.

Ga., Griffin—Spaulding County Bd. of Education, J. P. Manley, Supt., received bids May 8 for \$100,000, 1 and 2 story and basement, 190x53 ft., brick, cast stone trim school; comp. shingle roof, hardwood, tile and eement floors; Daniell & Bentell, Archts., Georgia Savings Bank Bldg., Atlanta.

4-10

Ga., Quitman — Bd. of Education erect grammar school to replace structure burned at loss \$75,000.

Ga., Thomasville—Bd. of Education, B. B. Broughton, Supt., having plans prepared by Lockwood & Poundstone, Marietta Bldg., Atlanta, for \$100,000 2-story and basement, rein. conc., brick high school; comp. roof, stone trim.

Ky., Georgetown—Georgetown College, I. B. Adams, Pres., rebuild chapel and cary noted burned at loss \$350,000.

Ky., Graham—Graham Consolidated School Dist. votes May 10 on \$21,000 bonds for school building.

school building.

La., Baton Rouge—School Dist. No. 10, W. H. Perkins, Chmn. Bldg. Comm., has low bid at \$37,500 from Clifford H. King. Prescott Lane, for \$40,000, 1-story, brick, frame and stone trim, 11-classroom Central High School, Sullivan Road and Canal Road in Tenth Ward; comp. and asbestos shingle roof, walls and celling of Celotex; Jones, Roessle & Olschner, Archts, Reymond Bldg., Baton Rouge, and Maison Blanche Bldg., New Orleans.

La. Braithwaite—Wm. R. Burk, Archts, Archts, Reymond Rouge, and Maison Blanche Bldg.

leans.

La., Braithwaite—Wm. R. Burk, Archt., Balter Bidg., New Orleans, preparing plans for \$7500 improvements to school at Braithwaite, and for teachers' cottage at Woodlawn for Plaquemines Parish School, Pointea-la-Hache; Plaquemines Parish School Bd., Pointea-la-Hache, receives bids May 17 for 1-story, 40x54 ft., frame, teachers' cottage at Buras, for which Wm. R. Burk has prepared plans; plans from A. L. Pourcia, Sec. School Bd., Belle Chasse.

La., Edgard—St. John the Baptist School Bd. having plans prepared by A. S. Montz, 740 Poydras St., New Orleans, for 1-story, brick, 2-classroom and auditorium addition and repairs to high school; comp. roof; \$25,-000.

La., Bastrop—Following contractors esti-mating on \$125,000, 2-story, rein. conc., brick and stone trim addition to Bastrop High School, bids May 15 by Morehouse Parish School Bd.: Tudor & Ratcliff, Commercial Bank Bldg., Alexandria; A. G. McBride, Bastrop; Lee Ellis, Old Central Bank Bldg., and W. C. Salley, Ouachita Natl. Bank Bldg. both Monroe; Ashton Glassell, Ricot Ave., Shreveport; J. W. Smith & Associates Archts., Ouachita Natl. Bank Bldg., Mon

La., Logansport—DeSoto Parish School Bd., F. O. Brankley, Pres., Mansfield, receives bids May 27 (extended date) for \$30,000, 2-story, brick, 6-classroom addition to Logansport High School: plans from Edw. F. Neild, Archt., City Bk. Bldg., Shreveport; following contractors estimating: J. M. Brown, Bacon Brewster Bldg.; McMichael Construction Co., City Bank Bldg.; Welch & McLain, all Shreveport; F. C. McClanahan, Homer; E. E. Rabalais & Son, Bunkle.

Rabalais & Son, Bunkie.

La., Shreveport — Following contractors estimating on \$75,000, 2-story, brick, 8-class-room and auditorium addition to Barrett School, bids May 21 by Caddo Parish School Bd., E. Weldon Jones, Supt.: Ashton Glassell, Ricou Ave.; K. C. Wilson, Slattery Bldg.; W. Murray Warner, Commercial Bank Bldg.; J. H. Hinerman; Ward Beloite; J. M. Brown, all Ricou-Brewster Bldg.; Central Contracting Co.; Welch & McLain; Gliman McConnell, Ricou-Brewster Bldg., all Shreveport; Edw. F. Neild, Archt., City Bank Bldg.

Miss., Abbeville—Lafayette County Bd. of Education, J. B. Hill. Supt., receives bids May 16 for 1-story, 90x150 ft., rein. conc. and brick, 8-classroom and auditorium high school; separate bids for plumbing, heating and electric wiring; plans from Hull & Malvaney, Archts., Merchants Bank Bldg., Jackson.

Miss.. Algoma—Algoma Consolidated School Dist. Trustees plan school and teachers homes; voted May 3 on \$12,000 bonds.

Miss., Duncan—Following contractors estimating on \$50,000, 1-story, 216x54 ft., brick, 10-classroom and auditorium school, bids May 23 (extended date): A. M. Langston, Shelby; Jernigan Construction Co., Tupelo; Dye & Mullings, Columbia; W. R. Ellis, Clarksdale; M. T. Reed, Bezoni; Beckelheimer & Small; Oden & Glenn, Carter Bldg., both Hattlesburg; O. B. Douglas Construction Co., Drew; W. G. Jones, 1831 Oliver Ave.; W. G. Stout & Sons, both Memphis, Tenn.; Howell Bros. Construction Co., Clarksdale; Hull & Malvaney, Archts., Merchants Bank Bldg., Jackson.

Miss., Gulfport—Bd. of Trustees, Fernwood Rural Separate School Dist., C. R. Switzer, Sec., Route 1, receives bids May 15 for 1-story, brick, 4-classroom and auditorium school; four separate contracts; (1) Building proper; (2) plumbing and heating; (3) electric wiring; (4) roofing and sheet metal work; plans from J. H. Wallis, Archt.

Miss., Brandon—School Bd. erect \$12,500, 4-classroom addition to school; Hull & Mal-vaney, Archts., Merchants Bk. Bldg., Jackson.

Miss., Goodman — Holmes Agricultural High School and Junior College Bd. of Trustees plan dormitory to house 100 students; remodel present dormitories; erect auditorium annex in connection with administration building which will be remodeled; home science building will be brick-veneered; erect superintendent's home; \$125,000 available. Agricultural

Miss., Liberty — East Fork Consolidated School Dist., J. T. Wilson, Smithdale, re-ceives bids May 21 for \$10,000 school. 4-24

Mo., Ava—Bd. of Education, V. A. Dobyns, Pres., soon ready for bids for \$30,000, 2-story brick high and grade school auditorium and gymnasium addition; J. R. Herr, Archt., 5512 Delmar St., St. Louis.

Mo., Clever — Bd. of Education, C. rown, Sec., erect \$20,000, 1-story and basent, 90x60 ft., brick high school addition an R. Sanford, Archt., 112 E. Rose, Pitters Kan. Dan R. Sa burg, Kan.

Mo.. Moberly—Bd. of Education, B. F. Self, Sec., has low bid at \$195,370 from Peterson Construction Co., Pioneer Trust Bldg., Kansas City. for 2-story and basement, 120x64 Senior High School; plumbing and heating, ft., brick, stone and rein. conc. Junior and \$45,232, John P. Beuth; electric, \$7000, Rick Electric Co., 1622 Chestnut St., St. Louis; Ludwig Abt, Archt., Reigel Bldg., Moberly.

Mo., Tarkio — Tarkio College, Dr. J. A. Thompson, Pres., having plans prepared by Felt, Dunham & Kreihn, 300 W. 47th St., Kansas City, and ready for bids about June 1 for \$125,000 administration building; furnishings, \$25,000; contain offices, chapel to seat 650 people, library and stack room for 20,000 volumes.

Mo., Oakville, St. Louis—Oakville School Dist., Arthur Baumgartner, Pres., Title Guar-anty Bldg., St. Louis, plans \$35,000 school.

Mo., Ozark — Ozark Consolidated School Dist. defeated \$40,000 bonds for school building. 5-1

Mo., Springfield—Bd. of Education, E. A. Barbour, Sr., Pres., erect \$45,000, 1-story brick gymnasium, 900 Jefferson St.; erect addition and remodel Sr. High School, 400 E. Central St.; \$91,000, 3 stories, brick; W. B. Ittner, Inc., Archt., 911 Locust St., St. Louis.

Mo., St. Louis—Washington University plans campaign to raise \$1,500.000 for endowment to enlarge School of Engineering; two buildings planned at present for classrooms and laboratories; ultimate plans call for 5 new buildings—civil engineering, mechanical engineering or electrical engineering, administrative office building, aeronautical engineering and combined auditorium and engineering library.

N. C., Asheville—Asheville Normal & Associated Schools, Jno. E. Calfee, Pres., having plans prepared by A. Lamont, 156 Fifth Ave., New York, for \$50,000, 2-story and basement, brick, fireproof library.

4-10

N. C., High Point—Bd. of Education, T. Wingate Andrews, Supt., receives bids May 13 for \$75,000, 1-story, 80x350 ft., brick and hollow tile elementary school; wood and comp. floors, bullt-up roof; Eccles Everhart, Archt., Commercial Bank Bldg. See Want Section—Bullding Material and Equipment.

N. C., Lenoir—Caldwell County Bd. of Education, J. W. McIntosh, Supt., erect school at Saw Mills; \$18,000.

Okla., Maud—Bd. of Education, Bert Har-ris, Clk., receives bids May 12 for \$95,000. 2-story, brick, stone and rein. conc. high school; Albert S. Ross, Archt., Ada. See Want Section—Building Material and Equip-ment 3-27

Okla., Sayre—School Bd. improve and expand school facilities; \$30,000 bonds voted.

Okla., Tulsa—Bd. of Education, School School Dist. No. 13, A. E. Smittle, Pres., receives bids May 14 for \$25,000, 2-story, brick and tile school; plans from A. J. Love & Co., Archts., Atco Bldg.

S. C., McCormick—Bd. of Trustees, De La Howe State School, J. B. Branch, Supt., re-ceives bids in May (date not set) for indus-trial building; 3 stories, granite, comp-roof; G. Lloyd Preacher & Co., Inc., Archts., Mortgage Guarantee Bldg., Atlanta, Ga.

Tenn., Bolivar—Bd. of Trustees, St. Kath-rine's Episcopal School plans improvements o include installation hot water heating lant for 2 school buildings, new plumbing plant for 2 fixtures, etc.

Tenn., Lewisburg—Marshall County Bd. of Education erect \$20,000 schools at Chapel Hill and Lewisburg and \$10,000 school at Cornersville; bonds voted.

Tenn., Memphis—Bd. of Education, W. J. Prescott, Pres., erect \$40,000, 3-story, 6-class-room addition to Bellevue Jr. High School.

Tenn., Memphis—Bd. of Education, G. W. Garner, Sec., has low bid at \$58,725 from Consolidated Contractors, Farnsworth Bldg., for 3-story, 80x86 ft., brick and rein. conc. addition to A. B. Hill School; auditorium, 1 story, 114x54 ft.; Jones & Furbringer, Archts., Porter Bldg.

Tenn., Nashville—Davidson County Bd. of Education, W. C. Dodson, Supt., having plans prepared by Geo. D. Waller, Ind. Life Bidg., for high school on Gallatin Road; also plans high school at Old Hickory.

Tenn., Nashville — Fisk University erect \$300,000 Chemistry Bldg. Tenn., Old Hickory—See Schools—Tenn., Nashville.

Tex., Brackettville — Brackettville Ind. School Dist., O. L. St. John, Pres., voted \$40,000 bonds for high school and remodeling present building; fireproof.

ing present building; lireproor.

Tex., Bryan—Bryan Ind. School Dist votes
May 27 on \$100,000 bonds for erecting negro
school and completing Bowie School; Giesecke
& Harris, Archts., Norwood Bidg., Austin.
4-17

Tex., Columbus — Columbus Ind. School Dist. Bd. of Trustees, J. A. Kearney, Pres., erect addition and remodel high school; 2 storles, brick and rein. conc.; conc., wood and tile floors; Marvin E. DeVee and Emory S. White, Archts., Merchants and Manufacturers Bidg., Houston; bids in.

Tex., Fairfield—Fairfield Ind. School Dist., P. D. Browne, Supt., erect \$28,000, 1-story, brick and rein. conc. school addition; Page Brothers, Archts., Littlefield Bidg., Austin; bids in.

Tex., Gonzales—Gonzales Ind. School Dist. Bd. of Trustees receives bids May 14 for \$40,000, 1-story. brick, fireproof, 7-classroom and assembly hall grade school; Will N. Noonan Co., Archt., Builders Exchange Bldg.; W. E. Simpson Co., Engr., Milam Bldg., both San Antonio. 3-13

Tex., Mason—Mason Ind. School Dist., O. A. Huff, Pres., receives bids May 12 for \$18,000, 4-classroom and auditorium, stone and frame addition to grade school; separate bids on plumbing and heating; Will N. Noonan Co., Archts., Builders Exch. Bldg., San Antonio. 4-17

Tex., Mercedes—Mercedes Ind. School Dist., Fred Johnston, Sec., voted \$280,000 bonds for high school, gymnasium and cafeteria and other improvements; R. Newell Waters, Archt., Weslaco.

Tex., San Antonio—Bd. of Education, Dr. J. A. McIntosh, Pres., has low bid at \$24,300 from P. Falbo & Co., 107 Morales St., for 1-story, 6-room addition and improvements to Thomas Nelson Page Jr. High School; brick and rein. conc., tile roof, cement and wood floors; Atlee B. & Robt. M. Ayres, Archts., Smith-Young Tower; W. E. Simpson Co., Engrs., Milam Bldg.; Phelps & Dewees, School Archts., Gunter Bldg. 424

wees, School Archts., Gunter Bldg. 424

Tex., San Antonio—Bd. of Education, J.
A. McIntosh, Pres, receives bids May 15 for
2-story, 96x47 ft., brick, tile and rein. conc.,
6-classroom addition to Joel Chandler Harris High School; comp. and wood floors, slatroof; separate bids for plumbing, heating and
wiring; Roy K. Hamberlin, Archt., Builders
Exchange Bldg.; receives bids May 16 for 2story, brick, tile and rein. conc., 2-room addition and remodeling Hawthorne Jr. High
School; separate bids on heating and wiring;
Olin Boese, Archt., Bldrs. Exchange Bldg.;
Beretta Stiles Co., Inc., Engrs., Natl. Bank
of Commerce Bldg.; Phelps & Dewees, School
Archts., Gunter Bldg.

Tex. San Antonio—Bd. of Education Dr.

Tex.. San Antonio—Bd. of Education, Dr. J. A. McIntosh, Pres., has low bid at \$35,930 from Mitchell Construction Co., Builders Exchange Bldg., for 2-story, 8-classroom and remodeling Hillcrest elementary school No. 24; brick and rein. conc.; Kelwood Company, Archt., Travis Bldg.; Matthews & Kenan, Engrs.. Smith-Young Tower; Phelps & Dewees, School Archts., Gunter Bldg. 4-24

Tex., Seabrook—Seabrook Common School Dist. No. 13, W. N. Day, Pres., Bd. of Trustees, erect \$20,000, 1-story, brick and stucco school; bids in.

Tex., Shallowater—School Bd., T. C. Calley, Pres., has plans by Peters, Strange & Bradshaw, Lubbock, for 10-classroom, auditorium and gymnasium school; \$55,000 bonds voted.

Tex., Vernon — Wilbarger County School Bd., reported, erect \$70,000 rural consolidated high school on Wilbarger-Foard County line.

high school on Wilbarger-Foard County line.

Va., Blacksburg—Following contractors estimating on \$150,000, 4-story, 100x120 ft., fireproof dairy husbandry building at Virginia Polytechnic Institute, bids May 24; J. L. Crouse, Box 642; Angle-Blackford Construction Co., American Bank Bldg., both Greensboro, N. C.; D. J. Phipps; Boxley Bldg.; H. A. Lucas, Colonial Natl. Bank Bldg.; S. B. Bennington & Son, 1101 Campbell Ave., all Roanoke, Va.; plans by Prof. C. H. Cowgill, of Architectural Dept.; Wiley & Wilson, Peoples Natl. Bank Bldg., Lynchburg, prepared plans for plumbing, heating and piping.

Va. Harrisonburg—State Teachers College.

Va., Harrisonburg—State Teachers College, Dr. S. P. Duke, Pres., has low bid from Nielson Construction Co., Harrisonburg, for \$170,000 administration building; limestone, freproof, tile roof; auditorium to seat 1500 people; plans by Charles M. Robinson, Architect, Times-Dispatch Bldg., Richmond. 4-10 Tex., Morse—Morse Ind. School Dist., H. W. Forester, Sec., erect 1-story, brick school; \$40,000 bonds voted.

Va., Radford—State Teachers College, Dr. P. McConnell, Pres., plans library build-

Stores

Ark., Fort Smith—Hunt Dry Goods Co., T. L. Hunt, 804 Garrison Ave., erect \$10,000, 2-story, brick addition to store; work to start in few weeks.

Ark., Pine Bluff — Cleveland-Matthews Hardware Co., Fourth and Main Sts., remodel building.

building.

Ark., Rogers—John Small erect brick business building on W. Walnut St.

Tenn., Knoxville—Mrs. Cecil H. Baker remodel building. 12 Market Square, to be leased to Miller-Jones Co., Columbus, Ohio.

Fla., Miami—W. T. Grant Co., 1441 Broad-

way, New York, erect \$50,000, 2-story department store, E. Flagler St. and Miami Ave.; plans by owners; Engr. Dept.; E. A. Ehmann, Assoc. Archt., Realty Bd. Bldg., Miami.

Fla., Miami Beach—J. C. Devine Properties, Inc., 1337 Collins Ave., ready for bids about June 1 for \$18,000, 1-story, 100x60, rein. conc. and conc. block, 5-store building, 600 block Washington Ave.; built-up roof, cast stone, metal and tile fronts; E. L. Robertson, Archt., Calumet Bldg.

La., New Orleans—Chas. Meyner, 7724 Maple St., Chmn., syndicate of business men who plan 1-story, stucco, 2-store building, Maple and Adams St.

Okla., Enid—A. P. Buchheimer, owner and manager of Rosenfield Jewelry Store, 118 N. Independence St., remodel and redecorate building.

Md., Hyattsville — Jacob Waldman, Olive Ave., has plans by A. S. J. Atkinson, 3801 Macomb St., N. W., Washington, D. C., for \$25,000, 2-story brick store and office build-

Mo., Kansas City—Foreman & Clark Clothing Co., W. A. Foreman, Pres., 28 Twentythird St., New York, plans \$65,000 improvements to 3-story brick store, 12th and Walnut Sts.

Tenn., Covington — Covington Supply Co. plans 2-story and basement store and office building; second floor to contain 24 offices.

Tenn., Nashville—H. A. Williams, Tioga Apts., representing Nashville and Chattanooga interests, announced plans for \$100,000, 100x200-ft. building, Madison St. and Gallatin Pike; contain 5 stores, number of offices, auditorium to be equipped for motion pictures, athletic events and expositions and seat 3000 people; J. H. Parmelee, Archt., American Trust Bidg., Nashville.

Tex., Coleman - W. P. Stobaugh having plans drawn for store building.

Tex., Houston—S. H. Kress & Co., 114 Fifth Ave., New York, receives bids May 15 for \$50,000, 2-story, brick and terra cotta store, Main and Front Sts.; 27,000 sq. ft. floor space; Edw. F. Sibert, Archt., 441 Lexington Ave., New York.

Tex., La Grange-Jacobs & Jaeger, Car-mine, erect tile and conc. building.

Tex., La Grange—C. R. Schmidt erect building adjacent to Missouri-Kansas-Texas passenger depot.

Tenn., Livingston—Jenkins & Darwin Dry Goods Co. rebuild store to replace recently burned structure.

Tenn., Livingston-Bilbrey & Smith Hardware Co. plans to erect building to replace recently burned structure.

Tex., Port Arthur—K. C. Rogers Music Co., K. C. Rogers, Pres., 324 Proctor St., enlarge and remodel store.

Tex., San Antonio—Guaranty Tile Co., A. V. Reynolds, 1102 Grayson St., erect building, Water and S. Alamo St.

Tex., San Antonio—R. H. Hemley, care Eickenroht & Cooke, Archts., Maverick Bldg., has low bid at \$21,700 from V. L. Rasmussen for 1 and 2-story, 160x60 ft., brick, tile and stucco furniture store on Fredericksburg Road between Ashby and French Sts.; Beretta Stiles Co., Inc., Engrs., Natl. Bank of Commerce Bldg.

Va., Roanoke—Philip Levy & Co., David B. Sonneborn, Mgr., 113 W. Campbell Ave., leased adjoining space and expend \$10,000 for improvements.

Theatres

Miss., Biloxi—Saenger Theater, Carlos Holscher, Mgr., soon let contract to install \$20,000 cooling system.

Tenn., Nashville—Crescent Amusement Co., Tony Sudekum, 515 Church St., ready for bids about May 15 for \$1,000,000, 10-story and basement, 93x245 tt., brick, stone and conc. theater, Sixth Ave., N., and Church St.; seat 2700 people; Marr & Holman. Archts., Stahlman Bldg.

Tex., Cleburne—Management, Yale Theater expend \$30,000 for improvements; install cooling system.

Tex., Donna — Tom Hester erect 2-story, brick and rein. conc. theater; Lloyd E. Mellor, Archt., Harlingen.

Tex., Lubbock—Mrs. G. T. Scales soon begin work on \$200,000, 3-story theater; seat 1,000 people; W. Scott Dunne, Archt., Melba Bldg., Dallas.

Warehouses

Fla., Jacksonville—C. W. Zaring & Co., 710 W. Bay St., erect warehouse, Dennis and Stockton Sts.

Fla., Jacksonville—Sherwin-Williams Co., t. H. Maey, Local Mgr., Union Terminal ildg., erect branch warehouse and office uilding; Bernard W. Close, Archt., Bisbee

Ky., Hopkinsville-J. E. Cooper erect to-

N. C., Asheville—T. C. Smith, 14 Lexington Ave., ready for bids about May 31 for \$30,000, 2-story, brick, struc. steel warehouse and sales building on Battery Park Ave., to be leased to Crane Co., 836 S. Michigan Ave., Chicago; comp. roof; Henry Irven Gaines, Archt., Public Service Bldg., Asheville.

Tex., Houston — Wackman Welded Ware Corp., 1617 Silver St., has permit for \$10,000 warehouse, 1602-04 White St.

BUILDING CONTRACTS AWARDED

Association and Fraternal

Association and Fraternal

Md., Baltimore—Potts & Callahan, Knickerbocker Bldg., have excavation contract for \$1,000,000 Scottish Rite Temple; steel, Dietrich Bros., 220 Pleasant St.; Clyde N. & Nelson Friz, Archts., Lexington Bldg., all Baltimore; John Russell Pope, Conslt. Archt., 542 Fifth Ave., New York; Chas. L. Reeder, Mech. Engr., 918 N. Charles St.; C. H. Osborne, Struct. Engr., 222 W. Franklin St.; Price Construction Co., Contr., Maryland Tr. Bldg., all Baltimore.

4-10

Tex., El Paso—Elks Club No. 187 let contract at \$100,000 to H. T. Ponsford & Sons, 914 E. Missouri St., for clubhouse, Campbell and Myrtle Sts.; fireproof, rein. conc., brick and terra cotta, 3 stories, 90x120 ft., conc. foundation; Braunton & McGhee, Archts., First Natl. Bk. Bldg.

Bank and Office

Bank and Office

D. C., Washington — Additional sub-contracts let on \$1,500,000 addition to American Security & Trust Co. bldg.: Granite, Dodds Granite Co., Milford, Mass.; excavation, Wm. Meyer, Philadelphia Ave. and Caton St., Baltimore, Md.; brick work, R. E. Milfor, 14th and G Sts., N. W.; reinforcing in foundation, Kaiman Steel Co., 910 17th St., N. W.; roofing, Warren Ehret, 2625 K St., N. W., sheet metal, Wolfsteiner Co., 1315 W St., N. W.; glass, Pittsburgh Plate Glass Co., Fourth and Channing Sts., N. W.; painting, E. W. Minte, 1213 12th St., N. W.; painting, E. W. Minte, 1213 12th St., N. W., all Washington; cut stone, Indiana Limestone Co., Bedford, Ind.; millwork, Oxford Millwork Co., Oxford, Pa.; orna. iron, Herzog Iron Works, St. Paul, Minn.; metal windows, Campbell Metal Window Corp., Pershing Square, New York; mail chute, Cutler Mail Chute Co., Rochester, N. Y.; York & Sawyer, Archts., 100 E. 42nd St.; Meyer, Strong & Jones, Mech. Engrs., 101 Park Ave., both New York; George A. Fuller Co., Contr., Munsey Bldg., Washington, and Fuller Bldg., New York; sub-contracts also lately noted for wrecking, hollow metal doors, struct, steel and marble; granite lately incorrectly reported let to George Dodds & Sons Granite Co., Xenia, Ohio; other contracts not let.

Fla., Miami—City National Bank let contract to Harrison Construction Co., 500 N. E. 45th St., to remodel bldg., Flagler St.; R. DeC. Weakley, Archt., 210 E. Flagler, 5-9

Churches

Ala., Birmingham — Pilgrim Lutheran Church, 819 S. 15th St., erect \$15,000 brick and hollow tile Sunday school and chapel, Charles St. and Fifth Ave.; 1 story, comp. roof, steam heat; Steinmeyer Bros., Archts., Intl. Life Bldg., St. Louis, Mo.; Moore & Woolley, Contrs., 713 S. 27th St.

Intl. Life Bldg., St. Louis, Mo.; Moore & Woolley, Contrs., 713 S. 27th St.

Md., Baltimore — Following sub-contracts let on \$200,000 Second Church of Christ. Scientist. on which stone for first floor is being laid: Hardwood, J. R. M. Adams, 400 W. Franklin St.; plumbing, gas fitting and water drainage. Harry L. Black & Son, 25 W. Clay St.; furring, lathing, etc., Coleman & Reilly, 4311 Miami Place; fire door frames and hardware through Consolidated Supply Co., 10 W. Chase St.; brick work, Henry F. Cory; struct. steel, Dietrich Bros., 220 Pleasant St.; rock excavation, Ehrhardt & May; sheet metal and roofing, W. A. Fingles, 29 S. Howard St.; planing and glazing, John L. Gillen, 3027 Hamilton Ave.; elect. work, Goldenberg Bros., 721 N. Gay St.; terrazzo and marble, American Tile & Cement Co., 27 W. North Ave.; granite work, O. C. Putney Corp., Carroll Station; heating, Wm. E. Wood Co., 18 N. Howard St.; mastle comp. flooring, Hachmeister-Lind Chemical Co., Grand and Leonard St., Pittsburgh, through Consolidated Supply Co.; glass, Hires-Turner Glass Co., 1540 Ridgely St., all Baltimore; millwork, Hess Planing Mill Co., Waynesboro, Pa.; steel bars and specials, Kalman Steel Co., 530 Fourth Ave., Pittsburgh, Pa.; steel windows, David Lupton's Sons Co., 2243 E. Alleghany Ave., Philadel-

phia, Pa.; conc. form material, National Concrete Construction Co., 176 Randolph Place, N. W., Washington, D. C.; limestone, Swenson Stone Co., 305 N. Wright St., Champaign, Ill.; Wyatt & Nolting, Archts., Keyer Bldg.; Price Construction Co., Contr., Maryland Tr. Bldg.; both Baltimore. 12-19

Md., Baltimore—Alsquith St. Presbyterian Church erect bldg., Harford Rd. and Oakcrest Ave.; use own material; 1 story and basement; Alfred Cookman Leach, Archt., 411 N. Charles St.; B. H. B. Ennis, Jr., Contr., 1933 E. 31st St., both Baltimore; organ

Tenn., Jackson—Second Baptist Church, Rev. W. P. Reeves, Pastor, erect \$60,000 bldg. with O. E. Hearn as Constr. Supt.; brick, 3 stories, 190x114 ft. for section, remainder 60 ft. wide; R. A. Heavner, Archt.; work not started. See Want Section—Building Material and Equipment.

ing Material and Equipment. 12-12
Tex., Ballinger—City let contract at \$27,142
to Suggs & Dunlap, 421 Nims St., Abilene, for city hall and fire station bldg.; fire-proof, masonry and conc., 2 stories, 50x90 ft., conc. and hardwood floors, tar and gravel roof; furnishings, equipment, etc., \$5000; Paul G. Silber & Co., Archts., Bedell Bldg.; Matthews & Kenan, Engrs., Smith-Young Tower, both San Antonio.

Tex., San Antonio—Shrine of the Little

Tower, both San Antonio.

Tower, both San Antonio.

Tex., San Antonio—Shrine of the Little Flower Parish, Rev. Edw. Soler, O. C. C. 606 Kentucky Ave., let contract at \$365,556 to Dennehy Construction Co., 518 N. Dewey St., Box 267, Oklahoma City, Okla., for church and priests' home, N. Zarzamora St., and Kentucky Ave.; plumbing, gas fitting and wiring in gen. contract; church of tile, stone, struct. steel and rein. conc., fire-proof, height equivalent to 3 stories, 70x 190 ft., conc., rubber tile and terrazzo floors. tile roof; home brick and rein. conc., 2 stories and basement, 100x60 ft., wood and cement floors, tile roof; bldgs. connected by passageway; C. L. Monnot, Archt., Perrine Bldg., Oklahoma City.

City and County

Ark., Forrest City—City let contract to C. A. Ahrlstedt for city hall and fire station; brick, 2 stories and basement, 44x120 ft., wood floors, comp. roof; auditorium seat 600; jall in basement; Estes W. Mann, Archt. Cotton Exch. Bidg., Memphis, Tenn. 4-17
Tenn., Mt. Pleasant—City let contract to J. R. Shackelford for \$10,000 city hall; brick and conc., 2 stories, 50x60 ft., hardwood floors, conc. jail; I. L. Caldwell, Archt. 9-12

Tex., Beaumont — Jefferson County Commrs.' Court, B. H. Johnson, County Judge, probably call for bids latter part of May or first part of June for \$1,000,000 court-house; brick, Fred C. Stone of Tisdale, Stone & Pinson, Ind. Life Bldg., Nashville, Tenn., and Goodhue Bldg., Beaumont), and A. Babin, Perlstein Bldg., Beaumont, architects.

Tex., Galveston—Galveston County let contract at \$31,615 to A. W. Russey, 3008 Avenue P, for annex to jail; brick and reinconc., 3 stories, 37x100 ft., rein. conc. floors, comp. flat roof; D. N. McKenzie, Archt., 2107½ E St., both Galveston; H. M. Sanford. Engr., Esperson Bldg. Houston; steel cells, Southern Prison Co., 4500 S. Presa St., San Antonio, at \$8490; plumbing and heating, H. I. Davis, 819 Avenue D, Galveston, at \$10,407.

Dwellings

Ala., Birmingham—T. M. Jones, 2130 Thirtieth Place, erect brick veneer residence, Lakeview Park; 1½ stories, 62x33 ft., comp. roof, hot air heat; Dehham & Denham, Archts., Comer Bldg.; Adamson, Boylston & White, Contrs., 1106 N. First Ave.

Ala., Decatur—Gillespie Sisters, 501 Bank St., erect \$11,000 residence, Hartcelle Rd.; brick veneer, cast stone trim, 2 stories, 56x 40 ft., asphalt shingle roof, steam heat; W. M. Smith, Contr., 12th Ave., West.

Ark., Pine Bluff.—W. G. Brasher erect \$10,000 residence, Oak and Harding St.; brick veneer, 2 stories, oak floors, tile or comp. roof, 9 rooms, tile bath; J. H. Culpepper, 1712 Beech St.

D. C., Washington—C. H. Gaskins, 5913 Georgia Ave., erecting 2 brick dwellings, 437-39 Oneida St., N. W.; 2 stories, 24x28 ft., wood floors, slate roof; \$16,000; plans and constr. by owner. See Want Section—Buildconstr. by owner. See Want ing Material and Equipment.

D. C., Washington — L. E. Breuninger & Sons, 24 Jackson Place, N. W., has permit for \$11,000 dwelling, 7715 Morningside Drive; also for \$9000 dwelling, 1328 Jonquil St., N. W.; brick, 2½ stories; owners build.

D. C., Washington—Boss & Phelps, 1417 K St., N. W., have permit for 2 brick dwellings, 4328-32 Brandywine St., N. W.; 2 stories; \$12,000; owners build.

Fla., Belleair, Clearwater—W. S. Coe remodel and enlarge residence; tile baths, shower; laundry, servants' quarters; Theo. H. Skinner, Archt., Scranton Arcade; Geo. Elchelberger, Contr., East Ave., both Clearwater.

Fla., Miami Beach—C. T. Edgar, 1673 N. Bay Rd., erect residence; work probably start in Summer; John & Coulton Skinner, Archts., French Village, Coral Gables; Wm. F. Bonsack, 528 Lincoln Rd., to receive con-

Fla., Miami Beach—Chas. Rodgers, 313 N. E. 24th St.. Miami, erect \$11,000 residence, 900 block Meridian Ave.; rein. conc., conc. block and stucco, 2 stories; R. A. Preas, Archt., 325 Twenty-third St.; Miami Beach. O'Neill-Orr Construction Co., Contr., 212 N. E. Fourth St., Miami.

E. Fourth St., Miami.

Fla., Miami Beach—J. P. Nielson, 55 N. E. 46th St., Miami, considers erecting residence, Jefferson Ave.

Fla., Miami Beach—Mrs. Bess Beach, 1120 Euclid Ave., let contract to Wm. F. Bonsack, Lincoln Rd., Miami Beach, for \$22,000 residence, garage and servants' quarters. Meridian Ave. and 18th St.; rein. conc., conc. block and stucco, 2 stories, tile and comp. roof, tile and other floors, 2 baths, steel sash; John & Coulton Skinner, Archts., French Village, LeJeune Rd., Coral Gables.

-Nelson R. Boice, Fla., Miami Beach-Fig., Miami Beach—Nelson R. Bolce, 753 Avenue Minorca, Coral Gables, started work on \$20,000 residence, 5736 Pine Tree Drive; rein. conc., conc. block and stucco, 2 stories, 38x52 ft., tile and other floors. 2 baths, tile and dcomp. roof, steel sash; John & Coulton Skinner, Archts., French Village, LeJeune Rd., Coral Gables.

Rd., Coral Gables.

Ga., Atlanta — Howard Candler, Jr., let contract to Carr Construction Co., Candler Bldg., for \$60.000 residence, Lullwater Rd.; brick, stone trim, 2 stories and basement, hardwood and tile floors, slate or tile roof, steam heat, conc. footings; Hentz, Adler & Shutze, Archts., Candler Bldg. 3-13

Ga., Atlanta — Clyde L. Turner, Healey Bldg., erect brick veneer residence, 132 Carter Ave., S. E.; 1 story, 5 rooms and bath, hardwood floors, comp. roof; owner builds.

La. New Orleans—Sisters of the Blessed

La., New Orleans—Sisters of the Blessed Sacrament, 5100 Magazine St., erect single dwelling, 3903 Pine St.; comp. roof; A. Bou-cree, Contr., 3711 Galvez St.

cree, Contr., 3711 Galvez St.

Md., Baltimore—Edgar A. Levi, Bldr., 309
Sulgrave Ave., erect Colonial dwelling. Fairway and Crossland Rd.; brick, 2 stories, 12
rooms, 3 baths, 2-car garage.

Md., Baltimore—Wm. Handel erect stucco
bungalow, 121 W. Elm Ave., Overlea Manor:
Henry Kolb, Inc., Contr., Belmar Ave. and
Bel Air Rd.

Md., Baltimore — Otto F. Unger, 4104 F rankford Ave., erect 8 frame dwellings and garages, 5208-20 Biddison Ave.; 2 stories, 22x25 ft. and 10x18 ft., hot air heat; \$24,000; Unger & Garland, Contrs., 4104 Frankford Ave.

Frankford Ave.

Md. Baltimore — Maryland Construction Co., Inc.. erect 5 brick dwellings, 1612-20 Abottson St.; 2 stories, 18.6x30 ft. and 18x30 ft. steam heat; \$16,000; F. E. Beall, Archt., 1334 St. Paul St.; owner builds.

Md., Baltimore—A. M. Hayes, 3411 University Place, excavating for \$35,000 residence, Homeland; stone, wood joists, 2½ stories, 41x55 ft., oak floors, stone foundation, slate roof; T. Worth Jamison, Jr., Archt., 12 E. Pleasant St.: J. Raymond Gerwig Co., Inc., Contr., 213 St. Paul St.

Md., Baltimore—Harry F. Page, 304 Ilchester Ave., erect dwelling, Upnor Rd. near St. Albans Way, Homeland; owner builds. Miss., Aberdeen—W. G. Peugh erect residence, Franklin St.; brick foundation, Celotex and plaster board; R. S. Fraker, Contr. Miss., Yazoo City—F. A. Taylor erect 8-

room brick veneer residence, Jefferson St.; gas heat; J. A. Whitehead, Contr.

Mo., Kirkwood, St. Louis—Lee E. Heinzelman, Clay St. and Argonne Drive, erect \$10,000 residence, 124 W. Bodky Ave.; 2 stories, 26x36 ft., slate coated roof, hot air heat; Dan Mullen, Jr., Archt., Clayton; Glen Hartshorn, Contr.

Mo., Springfield—A. M. Curtis, Landers Bldg., erect \$20,000 brick veneer and frame residence, 1016 E. Walnut St.; Dutch Colonial type, hardwood floors and finish, rubber tile, tile bath, asbestos shingle roof, vapor heat; Eugene F. Johnson, Archt., McDaniel Bldg.; W. W. Johnson, Contr., 301½ College St.

Mo., St. Louis—J. Reisel, 5427 Ruskin Ave., erect \$10,000 residence; brick, 2 stories and basement, 23x48 ft., hardwood floors, asphalt shingle roof, tile bath, hot air heat; August Winkel & Son, Contrs., 1810 N. Leffingwell Ave.

Mo., St. Louis—Norso Realty Co. erecting number dwellings, Upton St.

Mo., St. Louis—Arthur Vinyard, 6411 Enright St., erect \$10,000 residence, Belle Rive Acres; brick, 31x39 ft.; owner builds.

Mo., St. Louis—A. C. Kallemeier, 4604A Moraine St., erect 4 brick dwellings, 4621-27 Kossuth St.; 1 story, 24 x 46 ft. and 26x47 ft, hot air heat; \$24,000; J. Farling, Archt., Grand and St. Louis Sts.; owner builds.

Mo., University City, St. Louis — Albert Roddek, 1441 Burd Ave., erect \$10,000 residence, 7328 Ahern St.; brick, 2½ stories and basement, 35x41 ft., hardwood floors, compshingle roof, tile bath, stone foundation, warm air heat; Edw. Lentz, Archt., 721 Wainwright Bldg.; Emil C. Struckhoff, Contr., 7325 Wellington Ave.

N. C., High Point—W. C. Covington let contract to R. K. Stewart & Son, 154 S. Main St., High Point, for \$75,000 residence; fire-proof, 2 storles and basement, rubble stone, bar joist floors, slate roof; excavating; Northup & O'Brien, Archts., Starbuck Bldg., Winston-Salem.

N. C., Raleigh—D. L. Corbitt, 225 Forest Road, erect \$10,000 brick veneer residence, Cowper Drive; W. E. Chappell, Contr.

Okla., Oklahoma City—G. A. Nichols, Inc., 115 N. Harvey St., erect 6 to 8 additional dwellings, Nichols Hills; English type, brick, stone, stucco and half-timber; \$175,-000; Phillip Resnyk, Archt., 140 W. 42nd St., New York; owner builds.

Okla., Oklahoma City-C. A. Ratts, 2416 W. 22nd St., Aurora Court Addition.

Tenn., Old Hickory—Du Pont Rayon Co. let contract for 102 dwellings to Minter Homes Corp., 340 Third Ave., Huntington, W. Va.; \$250,000.

Tex., Fort Worth — Carb Building Co. Wheat Bldg., has permit for 2 brick veneed dwellings, 1208-09 Thomas Place.

Tex., Fort Worth—Star-Telegram and Record-Telegram erecting model dwelling. Westover Hills; English type; brick, rough stone, stucco and timber.

Tex., Houston—Miss Laura Baines ha permit for duplex and garage, 1919 Went worth St.; brick veneer, 2 stories, 4 baths \$10,000; C. C. Rhodes, Contr., 1903 Common wealth St.

Tex., Houston—Russell Brown Co., 3104 Main St., has permit for \$20,000 residence and garage, 2125 Pine Valley Drive; brick veneer, 2 stories, 11 rooms, 2 baths; owner builds.

Tex.. Houston—A. G. Wolf, 1637 Bonnie rae St., erect \$10,000 residence, 2222 Del lonte Drive; brick veneer. 2 stories; Geo. Broun, Contr., 4616 Main St.

Tex., Houston-F. R. Harvey erecting \$10,-000 bungalow, Wichita St., Southwood.

Tex., Houston—C. L. Morrison erecting \$10,000 Colonial residence, Southwood; English type, 2 stories.

Tex., Houston—C. L. Morrison erecting \$10,000 Colonial residence, Southmore Blvd.; 2 stories, 7 rooms.

2 stories, 7 rooms.
Tex., Houston—W. L. Edmundson, Second
Natl. Bank Bldg., purchased 6 acres, Dumble
St. near Telephone Rd.; erect small brick
dwellings; also started work on 2-story
brick veneer dwelling, 3409 Palm Ave., Southwood; 2 baths, 17 rooms, \$10,000.

Va., Norfolk—W. E. Smith, Bldr., 4312
Hampton Blvd., erecting 5 dwellings, Larchmont; \$50,000.

Government and State

D. C., Washington-District Comsn., Dist. Bldg., let contract at \$53,690 to Castor & Castor Construction & Engineering Co., 4205

New Utrecht St., Brooklyn, N. Y., for fire engine house No. 31 and oil house. 5-1

engine house No. 31 and oil house.

Ga., Fort Benning — Additional sub-contracts let on 26 officers' quarters and 15 noncommissioned officers' quarters, Fort Benning, on which footings are 80 per cent completed, foundations 50 per cent, brick work progressing on 15 dwellings and first floor framing on 15; roofing and sheet metal, Hinkle Bros., 2412 Fifth Ave., Birmingham, Ala.; hardware, Russell & Erwin Manufacturing Co., New Britain, Conn.; kalamein work, Peerless Fireproof Door Co., Brooklyn, N. Y.; tile, Macon Terrazzo Tile Co., Macon, Ga.; steel sash, Detroit Steel Products Co., Detroit, Mich.; limestone, Russellville Cut Stone Co., Russellville, Ala.; Algernon Blair, First Natl. Bk. Bldg., Montgomery, Ala., gen. contract at \$407,548.

Md., Baltimore—Treasury Dept., Jas. A.

Md., Baltimore—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., will erect limestone instead of marble post office; \$2,950,000, fireproof, modified Classic type, granite to first floor, 6 stories, basement and sub-basement, interior courts faced with light colored brick and stone trim, main entrance on Calvert St., second entrance on Fayette St.; 4 freight elevators, special mail chutes and mechanical conveyors, for post office, 4 passenger elevators, heating plant fuel storage and supply rooms in subspecial mail chutes and mechanical conveyors, for post office, 4 passenger elevators, heating plant, fuel storage and supply rooms in subbasement; parcel post division, public lobby, Lexington St. entrance, interior driveway from Guilford Ave., printing office, etc., in basement; post office on first and second floors; Third Army Corps to occupy third floor; fourth and sixth floors for Federal officials; fifth floor to contain 3 court rooms with offices; tunnel under Calvert St. to extend to Federal Reserve Bank at Calvert and Lexington; N. P. Severin Co., Contr., 222 N. Adams St., Chicago, Ill.

N. C., Fort Bragg—Constructing Quarter-master, reported, let contract at \$145,200 to V. L. Nicholson Co., 102 W. Clinch Ave, Knoxville, Tenn., for 1 field artillery regi-mental barracks and utilities.

mental barracks and defined.

N. C., Winston-Salem — Treasury Dept.,
Wetmore, Act. Supvy. Archt., Washington,
D. C., let contract at \$11,775 to Wm. Pearce,
220 W. 42nd St., New York, to extend mailing vestibule and constr. mail chute al-

Hotels and Apartments

Ala., Birmingham—Mrs. C. M. Shugerman let contract at \$45,00 to George Paul, 2337 S. 20th Ave., for 2-story and basement, brick veneer, 8-apartment; comp. roof; J. E. Salie, Archt., Empire Bldg.

Ala., Tuscaloosa—Dr. S. G. Hamilton and V. C. Hicks erect \$18,000 apartment; J. O. Holloman, Contr.; C. Morton Ayres, Archt.

Holloman, Contr.; C. Morton Ayres, Archt.
Ark., Hot Springs Natinonal Park—Edw.
B. Mooney, Scott Wood and Cleveland Smith
erect \$20,000 Marquette Hotel on Central
Ave.; 60 rooms, fireproof, construction by
Mr. Mooney.
Fla., Miami Beach—Roy F. France, Archt.
Bldr., 3103 Collins Ave., erecct \$118,000 cooperative apartment, 15th St. between Pennsylvania and Euclid Aves.; to be owned by
Hacienda Building Corp., of which purchasers of 14 apartment residences will be stockholders.
4-17 ers of 1 holders.

Fla., Miaml—Phil W. Herzog, 1440 S. W. 13th Ave., let contract to Miami Beach Construction Co., Alton Road, Miami Beach, for addition to apartment; Geo. Bruce, Archts., Biscayne Bank Bldg., Miami; work started.

started.

Ga., Atlanta—Gordon Burnett, Cltizens & Southern Bank Bldg., let contract at \$18,700 to W. P. Francis, 201 Luckie St., N. W., for improvements to ground floor of Peachtree Terrace Apartments on Peachtree Road; interior marble trim, conc., wood, tile and terrazzo floors; Richard W. Alger, Archt., Candler Bldg. See Want Section—Building Material and Equipment.

Ky., Horse Cave—Clarence Owens started work on 51-room, steel, fireproof Hotel Owens to replace recently burned structure.

With the contract of the contr

Miss., Jackson—A. D. Oppenheim, Madison St., and J. H. Asher let contract at \$31,593 to W. R. Broadway for 2-story, brick, English type, 15-apartment building, North and Boyd Sts.; asbestos shingle roof, tile baths, builtin features; Hull & Malvaney, Archts., Merchants Bank Bldg.

Mo., St. Louis—J. Goldman, 1407 Black-stone Ave., erect 2-story and basement, 107x 35 ft., brick 15-apartment, Rosebury St. and Skinker Road; tile and comp. roof, hardwood floors, steam heat; Ben Shapiro, Archt., Synd. Trust Bldg. owner builds by subcontract.

Mo., St. Louis—J. Schriner, 5821 Pennsylvania St., erect \$10,000, 2-story, 36x51 ft., brick tenement, 3926-28 Leona St.; comp. roof, hot air heat; G. Metal, Bldr., 3620 Gustine St.

Mo., St. Louis—P. Schmidt, 4548 Fair Ave., excavating for \$15,000, 2-story and basement, 37x49 ft., brick apartment, 2189-91 Linton St.; J. F. Behlem, Contr., 4519 St. Ferdinand St.; comp. roof, tile baths, hardwood floors, hot water heat.

wood floors, not water neat.

S. C., Columbia — Dietrich Bros., 220 Pleasant St., Baltimore, have contract for struc. steel and Truscon Steel Co., Youngstown, Ohio, contract for rein. steel and bar joists for 12-story, fireproof, 170-room hotel, Gervais and Sumter Sts., for Barringer Hotel Corp., W. R. Barringer, Pres., Florence; footings completed; Angle-Blackford Co., Gen. Contrs., Am. Bank Bldg., Greensboro, N. C.; H. A. Underwood, Archt., Hotel Carolina Bldg., Raleigh, N. C. 3-6

Tex., Liberty-Ott Hotel started work of \$35,000, brick, 12-room annex; Elmer Rat cliff, Contr.

W. Va., Huntington—Ralph Robison let contract to Neighborgall & Leach, 105 Tenth Ave., for \$40,000, brick, 12-apartment, 6th Ave. and Trenton Place.

Miscellaneous

Ala., Birmingham — Mountain Brook Estates, Mountain Brook Land Co., Jemison & Co., 221 N. 21st St., let contract to L. E. Ford, 3223 Altamont Road, for swimming pool, walks and court wall; \$25,000.

Schools

Ga., Hamilton—Bd. of Education, C. Norman Cramer, Supt., let contract to Snellings Lumber Co., Phenix City, Ala., for \$40,000, 1-story and basement, brick, 10-classroom and auditorium school; comp. roof, hardwood floors, steam heat; Daniell & Beutell, Archts., Georgia Savings Bank Bldg., Atlanta.

Archts., Georgia Savings Bank Bidg., Atlanta.

Ga., Rome — Following sub-contracts awarded on \$500,000, 4-story and basement, struc. steel frame, rubble stone, brick and tile dormitory for girls at The Berry Schools for which Batson-Cook Co., Inc., West Point, has general contract: Rubble stone masonry, Antonio Cescutti; electrical work, Cone Eletric Co.; grading and excavation, Ledbetter-Johnson; millwork, Marshall Manufacturing Co., all Rome; struc. steel, Carolina Steel & Iron Co., S. Em St., extended, Greensboro, N. C.; limestone, Monon Stone Co., Bloomington, Ind.; granite, E. H. France Granite Co., 1015 Fifth St., Macon; roofing and sheet metal, Atlanta Sheet Metal Works, Inc., 799 Marietta St., N. W.; misc. iron work, F. E. Golian Co., 101 Marietta St.; rein. steel, Kalman Steel Co., Candler Bidg.; tile, marble and slate, Carmichael Tile Co., 142 Ellis St., N. E.; gypsum roof deck, United States Gypsum Co., Candler Bidg., all Atlanta; Plumbing, heating, etc., L. J. Lehotay, Opelika, Ala.; arch work, R. Guastavino Co., 40 Court St.; casement windows, International Casement Co., 201 Devon St., both Boston; Coolidge & Carlson, Archts., 89 State St., Boston.

Ky., Harrodsburg—School Bd. let contract at \$19,774 to Clell Coleman & Sons for 4-classroom study hall and basement addition to Harrodsburg High School; Nevins, Morgan & Holbrook, Archts., Starks Bldg., Louisville.

Ky., Salvisa—Mercer County Bd. of Educa-tion, Harrodsburg, let contract at \$19,450 to Jones-Savage Lumber Co., Wilmore, for 6-classroom and auditorium school to replace previously burned structure; Churchill & Gil-lig, Archts., Fayette Bank Bldg., Lexington.

lig, Archts., Fayette Bank Bldg., Lexington.
La., New Orleans — Following additional
subcontracts awarded on Alcee Fortier High
School (foundation completed) for which R.
P. Farnsworth & Co., Inc., Maritime Bldg.,
have contract at \$595,559: Tile work, Eugene Zimmerman, 1721 Carondelet St.; vault
door, Diebold Safe & Lock Co., 57 Carondelet
St.; glazing, Pittsburgh Plate Glass Co., 314
Girod St.; painting, W. Scrimshaw, 4300 Elba
St.; marble, Weiblen Marble Co., 521 City
Park Ave., Donovan; hardware. Nachary
Builders Supply Co., 802 Perdido St.; finishing hardware, Stauffer, Eschleman, 511 Canal
St., all New Orleans; E. A. Christy, Supvg.
Archt. for School Bd.
4-17

La., Walker — Livingston Parish School Bd., H. O. Rodgers, Supt., let contract at

\$44,000 to R. L. Roland, 1908 Lee St., Alexandria, for 2-story, 112x117 ft., brick, stone trim school: W. R. Burk, Archt., Balter Bldg., New Orleans.

Md., Baltimore—Our Lady of Good Counsel, Fort Ave. and Cooksie St., erect \$44,000, 2-story, 59,6x101.8 ft. school; brick. vapor heat; W. Andrew Weise, Archt., 4213 Euclid Ave.; Clarke Construction Co., Contr., American Bldg.

Miss., Decatur—Newton County Agricultural and Junior College, M. J. Scarborough, let contract at \$52,000 to L. W. Hancock, 26th Ave., Meridian, for 1-story gymnasium and 2-story science and commerce buildings; brick; P. J. Krouse, Archt., M. & W. Bldg., Meridian. brick; P. Meridian.

Mo., Joplin—Bd. of Education, Dr. J. Barnett, Pres., let contract at \$57,000 to Busboom Brothers Construction Co., Fairbury, Nebr., for 2-story, brick additions to South Jr. High School; let contract at \$31,687 to Sanneman Construction Co., Topeka, Kans., for brick addition to West Central School; Felt, Dunham & Kreihn, Archts., Balcony Bldg., Kansas City.

Bldg., Kansas City.

Mo., Springfield—Bd. of Education, A. R., Stewart, Sec., let contract at \$39,675 to M. E. Gillioz, Monett, for 1-story and basement, 144x90 ft., brick and stone Fulbright Schol; Geo. F. Reed, Archt., Woodruff Bldg.; also let contract at \$103,976 to G. F. Hentschel, 1211 S. Pickwick St., for 2-story and basement, 176x106 ft., brick, stone and rein, conc. freproof Phelps Grade School; heating and ventilating, \$15,307, M. H. Elliott, 970 Prospect St.; plumbing, \$7087, J. D. Manley & Co. 514 College St.; electric wiring, \$3985, Ford Brass Co., 320 South Ave., Hawkins & Nichols, Archts., McDaniel Bldg.

Mo. St. Louis—Riverview Gardens Bd. of

Mo., St. Louis—Riverview Gardens Bd. of Public School Dist., Mrs. Etta M. Schuchardt. Sec.. 268 Circle Drive, let contract to Emil C. Fendler, 6220 Oakland Ave., for \$15,000, 1-story. 22x80 ft., brick addition to school on Bellefontaine Road, and for \$30,000, 2-story, 70x35 ft. brick grade school; Wm. B. Ittner, Archt., Bd. of Education Bldg. 5-1

Bellefontaine Road, and for \$30,000. Z-story, 70x35 ft. brick grade school; Wm. B. Ittner, Archt., Bd. of Education Bldg. 5-1

Mo., University City, St. Louis—Bd. of Education, Alfred Fairbanks, 6701 Delmar Blvd., let contract at \$111,990 to Woerman Construction Co., Contr., Synd. Trust Bldg., St. Louis, for 2½-story, 180x80 ft., brick and rein. conc., fireproof school. Hanley Road and Carleston Ave.; plumbing, \$9129. C. Moynihan & Sons, 2007 Olive St.; heating, \$17.982. Peters-Eichler, 1516 Pine St.; electric wiring, \$7460. Gamp Electric Co., 817 Spruce St.; Wm. B. Ittner, Inc., Archt., Bd. of Education Bldg., St. Louis.

N. C., Winston-Salem—Following sub-contracts awarded on Louisa Wilson Bitting Dormitory at Salem College, under construction (completed conc. walls of basement story), for which Fogle Brothers Co., 202 Belews Creek Road, has general contract: Struc. steel, Carolina Steel & Iron Co., S. Elm St., extended, Greensboro; misc. iron, Salem Steel Co., Vargrave St.; plumbing, Home Plumbing & Heating Co., 3rd St.; electric work, Clinard Electric Co., 200 N. Main St.; millwork, Fogle Brothers Co., 202 Belews St.; roofing, H. W. Clodfelter; 628 Shallavford St.; brick, R. W. Hedgecock, 718 Lovers Lane; all Winston-Salem; heating, Charles W. Christian Co., 937 Providence Road, Charlotte; pyrobar roof slab, United States Gypsum Co., Candler Bldg., Atlanta, Ga.; Hobart Upjohn, Archt.-Engr., Grand Central Terminal Bldg., New York. 4-3 Okla., Blanchard—School Bd. let contract at \$27,519 to Clarence Sikes, Chickasha, for 1-story, 105.9x110 ft., brick high school; built-up roof, wood floors; The Butler Co., Archt., Insurance Bldg., Oklahoma City. See Want Section—Building Material and Equipment.

Tenn., Johnson City—Bd. of Education let contract at \$14,700 to M. L. Beeler for addi-tion to Langston High School. 4-10

tion to Langston High School.

Tenn., Memphis — Sacred Heart Catholic Church, L. J. Kemphues, Pastor, Jefferson Ave. and N. Cleveland St., let contract to H. A. McGuire Construction Co., Dermon Bidg., for \$150,000, 3-story, and basement, \$5x130 ft., brick and stone, 12-classroom parochial school; Regan & Weller, Archts, Dermon Bidg.

Dermon Bldg.

Tex., Dallas — Following sub-contracts awarded on Roger A. Mills elementary school, under construction (brick work in progress), for which Eckert-Burton Construction Co., inc., Melba Bldg., has general contract at \$113,218: Steel, Austin Brothers, 1815 (Coombs St.; millwork, Dallas Mill & Lumber Co., W. Dallas; metal pans, Concrete Engineering Co., Construction Industries Bldg.; brick, Reliance Brick & Tile Co., Republic Bk. Bldg.; painting, H. T. Crabtree, 346 Woodin St.; plastering, Leo J. Wertz, 2600 Birmingham St.

W. Va., Fairmont—Following sub-contracts awarded on Science Building, under construction (excavation completed), at Fairmont State Normal School for which Green & Stowe, McDowell St. Welch, have general contract at \$159,400: Millwork, Morgan Lumber & Manufacturing Co.; marble and tile, T. A. Christeller, 213 Delaware Ave., both Charleston; limestone, Walker Bros. Stone Co., Bloomington, Ind.; framing, Georgia Lumber Co., 800 Bluefield St.; misc. iron work, Central Sales & Purchasing Co., L. C. Bidg., both Bluefield; rein. steel, Kalman Steel Co., 530 Fourth Ave.; struc. steel, Keystone Engineering Co., Maloney Bldg., both Pittsburgh, Pa.; R. A. Gillis, Archi., Fieming Bldg., Fairmont.

Stores

Ala., Huntsville—John C. Lowe erect 2-story, brick store; Blalock & Norquist., Contrs., Florence; Harry Frahn, Archt., Shef-field

Fla., Miami Beach—Taradash Properties, Inc., 1461 Washington Ave., has permit for \$12,000 store, Washington Ave. and 6th St.; W. S. Green Co., Inc., Contrs., 1107 Fitth St.; A. Lewis, Archt., 4411 N. Meridian Ave.

Fla., South Jacksonville, Jacksonville—A. N. Burkholder let contract to E. J. Burkholder, 539 tatherine St., for improvements to Burkholder Bldg., Flagler St. and Hendricks Ave.; Spanish type, stuccoed.

Ga., Columbus — B. H. Harris Co., 101 Twelfth St., let contract to M. C. Barlow, 1147½ Broadway, for 1-story and basement, 40x75 ft., brick and frame store, 13th St. and Linwood Blvd.; built-up roof, conc. and maple floors; F. Roy Duncan, Archt., Ex-change Bldg.

La., New Orleans—J. B. Riley, 4536 S. Miro St., soon ready for sub-bids on store building.

La., Opelousas—Maurice Heymann, Lafayette, let contract at \$49,425 to A. C. Stewart, 810 E. Boulevard, Baton Rouge, for 1-story and mezzanine, rein. conc., brick, and rein. conc., fireproof department store, Main and Union Sts.; built-up roof. comp. roof, wood and tile floors; Wm. T. Nolan, Archt.Engr., Canal Bank Bldg., New Orleans. See Want Section—Building Material and Equipment.

Md., Baltimore—J. G. Valiant Co., 224 N. Charles St., erect 4-story addition and remodel building, 1106-08 N. Charles St., for furniture store; \$20,000, 38.6x39.11 ft., steam heat; Herbert J. West, Bldr., Knickerbocker Bldg.; private plans.

Md., Baltimore—James F. Thrift, 216 St. Paul St., has permit for \$14,000, 3-story, 24x 100 ft. building, 223 N. Calvert St.; slag roof, steam heat; A. Goodman, Bldr., 2000 Whittier Ave.

Whittier Ave.

Miss., Picayune—E. R. and M. D. Tate let contract to G. W. Hall for 1-story, brick commercial building on Harvey Ave.

Mo., Kansas City—Forest Realty Co., Wm. R. Jewell, excavating for 4-store building. 31st St. and Forest Ave.: Jewell Construction Co., Contr., both 3841 Forest St.

tion Co., Contr., both 3841 Forest St.

Mo., St. Louis—R. Rex, 6229 Gravols Ave.,
excavating for \$20,000, 2-story and basement,
37x89 ft., brick store and apartment, 5001
Pernod Ave.; slate roof, hardwood floors;
owner builds by subcontract.

N. C., Winston-Salem—Investment Building
Co., H. W. Nash, V.-P., 100 Spruce St., started work on \$60,000, 3-story, 42x154 ft., brick
and tile, 72-room apartment, First and Spruce
Sts.; owner, Archt.-Bidr. See Want Section
—Building Material and Equipment.

S. C., Darlington—J. E. Phillips let con-

S. C., Darlington—J. E. Phillips let con-ract to Southern Builders, Inc., Florence, o rebuild 5 stores recently burned; \$15,000, rick and stucco, wood floors, built-up roof; L. D. Harrall, Archt., Bennettsville.

Tenn., Knoxville—Wright-Cason Electric Co., 303 W. Church St., started work on 1-tory and basement, 18x50 ft., brick store on Church St.; Weaver & McGill, Contrs., General Bldg.

Tex., Alpine—Judge J. C. Fuller, Marfa, let contract to Leaverton Bros., Marfa, for \$50,000, 2-story and basement, rein. conc., steel, tile and brick store and office building; stone trim, rein. conc. floors, plate glass front; Roy K. Hamberlin, Archt., Bldrs. Exchange Bldg.

Tex. Heystory, Dr. R. F. Ferrill, 4071.

Tex., Houston—Dr. R. F. Ferrill, 407 ½ Milam St., has permit for \$11,500, 2-story, brick veneer store and apartment, 2326 Dowling St.; Terrell & Lea, Contrs.

W. Va., Clarksburg — Henry Haselbacher 400 West Virginia St., has contract to erect 2-story brick store and office building, W. Pike and S. Fourth St.; first floor to be occupied by "Candyland"; second floor for offices.

Theatres.

Mo., St. Louis—Theatre Realty Co., 519 N. Grand Ave., expend \$20,000 for improve-ments to store, 519-21 N. Grand Ave.; W. F. Kaahl, Bldr., 350 N. Clark St., Chicago; P. J. Bradshaw, Archt., 718 Locust St., St. Louis.

Warehouses

Ga., Baxley — J. E. Dyal erecting tobacco warehouse; \$15,000, one-story, 100x400 ft., brick, frame and sheet metal; G. E. Plier, Archt.-Contr.

Archt.-Contr.

Ga., Valdosta—Savannah Avenue Tobacco Warehouse Co., Tom Gary, Jr., Pres., Lexington, Ky., let contract to W. H. Spooner, Quitman, for \$50,000, 225x225 ft., brick and tile warehouse on Savannah Ave.; comp. roof, conc. floors; 50,000 sq. ft. floor space.

3-27

Trade Literature

Motor-Generator Sets .- The Reliance Electric & Engineering Company, Cleveland, Ohio. has issued bulletin No. 500, illustrating and describing Reliance motor-generator sets for converting alternating current to direct current. Bases of heavy steel plate, electrically welded, support the generators, which are built with the same mechanical parts as the Reliance type T heavy-duty motors.

Industrial Equipment.—The Atlas Metal Works, Dallas, Tex., manufacturers of sheet metal products, are occupying a new 7-acre plant, a view of which is presented in a folder issued by the company, with a reference to its department of Automotive Service Plant Equipment. Another folder illustrates and describes one of the company's products, the Atlas S-4 industrial motor stand.

Rex Road Pumps.-A catalogue for 1930 issued by the Chain Belt Company, Mil-waukee, Wis., covers a new and complete line of Rex diaphragm, centrifugal, plunger, and road pumps. The publication illustrates and describes Rex 4-inch diaphragms, diaphgrams with force converter, self-priming centrifugal pumps; double diaphragm units, Rex Waterboy 2-inch centrifugal, plunger force pumps and others. It also devotes space to the Rex well-point systems.

Transportation. - Economical transportation for use in manufacture and distribution of commodities is stressed in the April edition of Storage Battery Transportation, published by the Edison Storage Battery Company, Orange, N. J. Among the subjects discussed is a special article prepared by J. L. Pulster, New Orleans district manager of the company, relating to the economical use of storage battery locomotives in salt-mining, featuring the Weeks Island, (La.), development of the Myles Salt Co., Ltd.

Large Cast Iron Pipe .- Because of an upward trend in demand for cast-iron pipe of large diameter, with prospects that 1930 demand will exceed that of previous years, the United States Pipe and Foundry Company, Burlington, N. J., has issued an attractive book illustrating and describing a number of notable installations of large diameter castiron pipe, some of these not yet completed. Southern installations include 30,000 feet of 48-inch pipe for the Louisville (Ky.) Water Co.; 20 miles of 16 to 36 inch pipe for a new water system at Dallas, and an installation of 48-inch pipe in Atlanta.

(Continued on page 101)

WANT SECTION

THE CLASSIFICATIONS IN THIS SECTION ARE: **Building Materials**

Machinery and Supplies

Bids Asked Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Machinery and Supplies

Brass and Aluminum Foundry Equipment.

—Texas Brass Mfg. Co., Inc., 1411-17 Elysian
St., Houston, Tex.—Wants prices and data
on modern brass and aluminum foundry
equipment.

Brick Plant Equipment.—Houston Brick & Tile Co., James H. Edmonds, Pres., 901 Barkdull St., Houston, Tex., wants catalogs, prices and data on various kinds of equipment for brick plant, including:

(1) Clay Gatherers

(2) Kilns—round down draft
(3) Pumps

(3) Pumps (4) Tanks—oil.

Buses. — Over State Transportation Co., Inc., C. E. Shriver, Mgr., Fairhope, Ala.— Wants prices and data on 2 16-passenger

Canning Plant Equipment.—Florida Indian River Canning Co., Ft. Pierce, Fla.—Wants data and prices on complete outlay of can-ning machinery and equipment.

Engine (Corliss) .- See Generator Set.

Engine (Corliss).—L. R. Camp, Engr., 815 Watts Bldg., Birmingham, Ala.—Wants Cor-liss engine, size 20x42 in. right hand with belt wheel, Hamilton heavy duty type pre-ferred; must be in first class used condition.

Generator Unit.—Good Roads Supply and Machinery Co., 165½ N. High St., Columbus, Ohio., has client—Wants prices and data on 200 to 250-kw., d.c. engine driven generator unit, 250 volt; uniflow type of standard make preferred; can use Corliss type or 4 valve.

Hoisting Equipment. — Robert O. Smith (Gen. Contr.), 3702 San Gabriel St., Austin, Tex.—Wants prices and data on hoisting equipment to lift 5-ton loads.

Sewing Machines (Novelty).—Drapery Mfg. Co., P. Roberts, Pres., 714-720 Washington Ave., St. Louis, Mo.—Wants prices and data on several novelty sewing machines for manfacturing draperies, curtains, bedspreads and bathroom sets.

W. M. Smith & Co. (Mchy. Dealer), 4601
First Ave., Birmingham, Ala. Wants prices
and data on following:
(1) Drill (Radial)—i to 6 ft.
(2) Wheel Press (Car)—150 to 200 ton car.

W. M. Smith & Co. (Mchy. Dealer), 4601 First Ave., N., Birmingham, Ala.—Wants to represent manufacturer of: (1) Tractors (Farming). (2) Cultivators, etc.

Woodworking Machinery.—McGowin-Foshee Lumber Co., Willow, Fla.—Wants prices and data on machinery for manufacturing nail, bolt and spike kegs of long leaf yellow pine.

Ed. P. Phillips Machinery Co. (Construction Equipment, Contractors' Supplies)
Ninth and Cary St., Richmond, Va.—Wants
prices and data on following:

(1) Derrick (Stiff Leg) — 6, 8 or 10 ton
capacity, with 75-ft. boom, used
(2) Dragline Scraper—Sauerman, ½, ¾ or 1
yd., equipped with gasoline engine.

yd., equipped with gasoline engine.

Tanks (Bulk Storage), etc.—Carolina Gas & Oil Co., Florence, S. C.—Wants prices on following, f. o. b. Florence:

(1) Pipe Lines
(2) Pumping Outfits
(3) Valves and Vents—for bulk tanks
(4) Tanks (Bulk Storage)—3, used, for gasoline and kerosene, 2 for lubricating oil; capacity 10,000 to 20,000 gals.

Tryon Toy-Makers & Wood-Carvers, Tryon, N. C.—Wants prices and data on following, new and used, small:
(1) Mortise Machine
(2) Saw (Cut-Off)
(3) Saw (Scroll)
(4) Shaper
(5) Tenoning Machine.

Guyan Machine Shops, Logan, W. Va.—Wants prices and data on folowing:

(1) Crane—about 5 ton capacity, locomotive type, electrically or gasoline operated

(2) Hoists—for I beam, 1 to 3 ton capacity, a. c. and d. c., 220 volts

(3) Lathe—about 20 in. x 16 ft. or longer with taper attachment

(4) Locomotive (Electric)—6 ton, 48 in. gauge, 250 volts, not over 24 in. high, with cable reel

(5) Milling Machine—for keyseating shafting

(5) Milling Machine—for keyseating shafting
(6) Motors—a. c., 220-440 volts, 3 phase, 60 cycle, 5 to 100 h. p.
(7) Motor-Generator Set—Ridgeway, 150 or 220 kw. with 6600-volt, 60-cycle motor, 250-volt generator
(8) Punch and Shear—preferably No. 1½ Buffalo Universal Iron Worker
(9) Shaper—about 24 in., preferably single pulley drive
(10) Welding Machine—200 to 300 ampere, gasoline driven.
Luckeny Machineay Co. 213 Mileane Ridge

Jackson Machinery Co., 313 Milsaps Bldg., Jackson, Miss.—Wants prices and data on following:

(1) Excavator -- Sauerman, about 11/2 yd.

capacity, steam driven, used

(2) Generator—Diesel driven, about 350 kw.,
3 phase, 60 cycle, 2300 volt, with 00h. p. engine direct connected, used.

W. M. Smith & Co. (Mchy. Dealer), 4601
First Ave., N., Birmingham, Ala.—Wants
prices and data on following:
(1) Cranes (Locomotive)—2 8-wheel, 15 to
20 and 25 to 30 tons capacity
(2) Turbo Generator—1500 to 2000 h. p.

Miscellaneous

Plant Covers.—J. P. Little, 700 N. Ft. Harrison Ave., Clearwater, Fla.—Wants prices and data on quantity of covers for protecting tender vegetables from occasional cold weather: cardboard material, water-proofed, of following dimension: 4 ft. long, 11 in. wide, 11 in. high, cross section to be half of an ellpse, ends rounded and sloped back so as to nest for shipment, material 3/16 in. thick.

Ticket Forms and Rubber Stamps.—Ov. State Transportation Co., Inc., C. E. Shrver, Mgr., Fairhope, Ala.—Wants prices and data on ticket forms and rubber stamps.

Building Material and Equipment

Arkansas Power & Light Co., W. A. Thomas, Batesville, Ark., installing system of natural gas and wants catalogs and prices on necessary equipment, including:

Burners—for converting coal equipment to gas

gas Gas equipment—for restaurants and hotels Heating Units—house Heaters—hot water.

A. Q. McLean, Bldr., 144 Clifton St., S. E., cants prices on following for dwellings: Flooring—hardwood, tile Plaster Board Roofing—asphalt shingle.

Eccles Everhart, Archt., Commercial Bank Bldg., High Point, N. C., wants prices on following for \$75,000 school, High Point: Flooring—tile, composition Limestone Roofing—built-up, slate Steel Sash and Trim Tile—hollow Ventilators.

Ventilators. Harmon & Mattison Construction Co., In-trance Bldg., Oklahoma City, Okla., wants rices on following for \$40,000 office bldg.: Flooring—linoleum.

John W. Cowper Co., Inc., State Planters Bank Bldg., Richmond, Va., estimating on improvements for Industrial Rayon Corp. plant at Covington, and wants subbids and material prices by May 12.

Southern Quarrying Co., Elberton, Ga., wants prices on steel building, 40 to 60 x 200 to 300 ft., with runway for electric crane of about 20-ton capacity.

A. L. Sparks, Archt., 1528 Railway Exch. Bldg., St. Louis, Mo., wants prices on fol-lowing in connection with \$18.000 improve-ments to offices for Missouri-Kansas-Texas

Co.:
Flooring—linoleum
Metal Doors—two
Steel Sash and Trim.

Albert S. Ross, Archt., Ada, Okla., wants prices on following for \$95,000 high school at Maud, Okla.. Cast Stone Flooring—hardwood, linoleum Metal Doors Roofing (flat)—built-up Steel Sash and Trim Tile—gypsum, hollow Yaults Vaults Ventilators Wire Glass.

C. H. Gaskins, Bldr., 5913 Georgia Ave., Washington, D. C., wants prices on follow-ing for dwellings: Cast Stone Electric Refrigerators Flooring—linoleum Roofing (hip)—slate.

Roofing (hip)—slate.

Davis & Dunlap, Archts., 1801 Walnut St., Philadelphia, Pa.. want prices on following for \$272,000, 3-story and basement University Demonstration High School, West Virginia University, Morgantown, W. Va.: Brass and Bronze Work Cinder Concrete Blocks Dumb Waiters Flooring—terrazzo, tile, composition Incinerator Limestone Marble Metal Doors Plaster Board Roofing (flat)—built-up Tile—hollow Terra Cotta Trim Wire Glass.

Guyan Machine Shops, Logan, W. Va.,

Guyan Machine Shops, Logan, W. Va., ants prices and data on: Shed (Steel)—or building about 40x80 ft.

H. I. Gaines, Archt., Public Service Bidg.,
Asheville, N. C., wants prices on following
for \$78,000 dwelling, Anderson, S. C.:
Electric Refrigerators
Flooring—hardwood, linoleum
Incinerator
Marble

Roofing—tile Steel Sash and Trim Tile—hollow Brass and Bronze Work.

W. T. Nolan, Archt., Canal Bank Bldg., New Orleans, La., wants prices on follow-ing for \$50,000 department store, Opelousas, La., for Maurice Heymann: Cast Stone Flooring—tile Metal Doors Roofing (flat)—built-up

Metal Doors
Roofing (flat)—built-up
Tile—gypsum, hollow.
Robt. O. Smith, Contr., 3702 San Gabriel
St., Austin, Tex., wants prices on following
for dwelling:
Electric Refrigerators
Flooring—linoleum, tile
Mail Chutes
Metal Doors
Roofing—tile
Sheet Metal Door and Window Frames
Steel Sash and Trim.
The Butler Co., Archt., Insurance Bidg.

Steel Sash and Trim.

The Butler Co., Archt., Insurance Bidg., Oklahoma City, Okla., wants prices on following for \$30,000 high school, Blanchard, Okla.:

Cast Stone
Flooring—hardwood
Plaster Board
Roofing—bullt-up
Tile—hollow

H. W. Nash, 100 Spruce St.. Winston-Salem, N. C., wants prices on following for \$60,000 apartment:
Incinerator.
Flooring—linoleum, incinerator.

Rev. W. P. Reeves, Pastor, Second Baptist Church, Jackson, Tenn., wants prices on following for \$60,000 bldg.:

Cast Stone
Flooring—hardwood
Plaster Board
Roofing—asphalt shingle, built-up.

W. P. Francis, Contr., 201 Luckie St., N. W., Atlanta, Ga., wants prices on following for \$20,000 apartment for Gordon Burnett: Flooring—hardwood, terrazzo

Tile-gypsum

Bids Asked

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids May 16 for following, Sch. 2554: Air compressos, school buses, printing presses, pneumatic hoists, metal racks, dip-per lips, angle bars, splice bars, cable, mag-net wire, pipe fittings, etc.

Air Compressor.—Commrs., Dist. of Columbia, Washington, D. C.—Bids May 16 for portable gasoline driven air compressor, mounted on automobile truck.

Air Compresser.—Commrs., Dist. of Col-mbia, Washington, D. C.—Bid May 20 for compressor

Ammonia.—U. S. Engr. Office, Mobile, Ala.
—Bids May 15 for ammonia, as required during fiscal year 1931.

Beacons (Airway).—Div. of Supplies, Dept. of Commerce, Washington, D. C.—Bids May 23 for constructing Kingsville-Waco section of Brownsville-Fort Worth airway, including installing about 25 electric revolving beacons and 1 electric code beacon mounted on 51-ft. galv. steel skeleton towers, together with appurtenances and accessories.

Bolts, Washers, Cap Screws—U. S. Engr. Office, Washington, D. C.—Bids May 20 for olts, washers, cap screws.

Bridges.—State of Arkansas. Bids for 4 bridges, See Construction News — Roads, Streets, Paving.

Bridges, etc.—State of West Virgini Bids for 2 bridges and 2 culverts. See Co struction News—Roads, Streets, Paving.

Bridges. — Macon, Miss. Bids for 11 bridges. See Construction News — Bridges, Culverts, Viaducts.

Bridge.—Port Arthur, Tex. See Constr on News—Bridges, Culverts, Viaducts.

Brushes (Varnish),—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 22 for 1600 varnish brushes, delivery Philadelphia, Pa.

Cement (Portland).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 14 for 1000 bbl. Portland cement, delivery, Quantico, Va.

Clips (Rope).—U. S. Engr. Office, Vicksburg, Miss.—Bids May 14 for 400,000 Japanese wire rope clips.
Cloth.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 21 for 2000 yd. scarlet cloth, and 300 yd. sky blue serge, delivery Philadelphia, Pa.

Philadelphia, Pa.

Cement.—U. S. Engr. Office, Huntington,
W. Va.—Bids May 12 for 125 bbl. mill tested
American Portland cement.

Coal.—Supt. of Lighthouses, Custom House,
Baltimore, Md.—Bids May 28 for approx.
7000 long tons bituminous steam coal, 2000
tons delivery Baltimore Harbor, Md.; 5000
tons to Norfolk Harbor, Va.

Cup Grease.—U. S. Engr. Office, Hunting-in, W. Va.—Bids May 15 for cup grease.

Dust and Waste Collecting System. —
Marine Corps, Q. M. Dept., Washington, D.
C.—Bids May 15 for furnishing and completely installing dust and waste collecting
system in carpenter shop, marine barracks,
Quantico, Va.

Quantico, Va.

Excavation, etc. — City, A. J. Hawkins, Birmingham, Ala.—Bids May 30 for 79,600 cu. yd. earth excavation, 36,400 cu. yd. rock excavation, 500 sq. yd. rip-rap masonry on Section 1. Village Creek draining project. See Construction News Columns—Drainage, Dredging and Irrigation.

Forgings. — Bureau of Ordnance, Navy Dept., Washington, D. C.—Bids May 19 for 20 14-in. 50 liner forgings, 5 8-in. 55 liner forging, 28 5-in. 51 liner forgings, 12 4-in. 50 liner forgings and 32 5-in. 25 gun barrel forgings.

Gasoline and Kerosene. — Panama Canal, Office of Gen Pur. Officer, Washington, D. C.—Bids May 20 for bulk motor-grade gasoline and kerosene, Sch. 2555.

Generating Sets.—U. S. Engr. Office, Mem his, Tenn.—Bids May 14 for electric gen nis, Tenn.-rating sets.

Generating Sets.—Office, Ch. Engrs., Washington, D. C.—Bids May 16 for 4 5-kw. portable generating sets, 125 volt.

Gravel.—State of Louisiana. See Roads, Streets, Paving.

Grease, etc.—U. S. Engr. Office, Mobile, Ala.—Bids May 15 for grease, oil, gasoline and kerosene, as required during 6-month period ending Dec. 31, 1930.

Hardware, etc.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 19 for hard-ware, etc., delivery Philadelphia, Pa.

Lampblack.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 17 for 1000 lb. lampblack, delivery Philadelphia, Pa.

Launch.—U. S. Engr. Office, Vicksburg fiss.—Bids May 23 for 26 to 28-ft. gasolin Vicksburg, launch.

Levee.—U. S. Engr. Office, Second New Orleans Dist., Foot of Prytania St., New Orleans, La.—Bids May 27 for 6,200,000 cu., yd. levee work in Second New Orleans Dist., under straight contract. See Construction News Columns—Miscellaneous Construction.

Machine Shop Equipment, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids May 13 for variety saw table, hollow chisel mortiser and motor driven shaper; bids May 20 for pneumatic hammers, drill chucks, electric portable drills and grinders.

Machine Shop Equipment.—Bureau of Sup-lies and Accounts, Navy Dept., Washing on, D. C.—Bids May 20 for valve reseating utilts, stencil cutting machines; bids May 7 for motor driven engine precision bench

Miscellaneous. — Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids May 17 for following, Sch. 2556: Galvanized iron or steel sheets, galvanized corrugated roofing, fire brick, water clos-ets, brass rods, wire, railing fittings, pipe clamps, pipe hangers, etc.

Monuments.—Office of Constructing Quar-ermaster, Tupelo, Miss.—Bids May 26 for constructing 2 monuments and foundations therefor, 1 at Tupelo and other at Brice's Cross Roads, Lee County, Miss.

Nails.—U. S. Engr. Office, Huntington, Va.—Bids May 19 for common wire r in 100-lb, kegs.

Pipe and Fittings. — U. S. Engr. Office, Huntington, W. Va.—Bids May 12 for pipe and fittings.

Pipe (Reinforced Concrete). — See Sewer Construction.

Pipe (Vitrified) .- See Sewer Construction.

Pump Unit.—U. S. Engr. Office, Vicksburg, Miss.—Bids Medical May 12 for ballast pump

Pump (Dredging).—U. S. Engr. Office Savannah, Ga.—Bids May 15 for cast iron dredging pump.

Pencil Pointing Machines.—Marine Corps Q. M. Dept., Washington, D. C.—Bids May 19 for 300 pencil pointing machines, delivery Philadelphia, Pa.

Rods.—State of Maryland, Pld for Roads.—State of Maryland.

Roads.—State of Maryland. Bid for 5 roads. See Construction News — Roads, Streets, Paving.

Roads.—State of West Virginia. Bids for 19 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Texas. Bids for 4 roads. ee Construction News—Roads, Streets, Pav-

Bond.—Dallas, Tex. See Construction News—Roads, Streets, Paving. Roads.—State of South Carolina. Bids for 20 roads. See Construction News—Roads, Streets, Paving.

Rods (Brass).—U. S. Engr. Office, Huntington, W. Va.—Bids May 14 brass rods;

hexagon, in stock lengths approx. 10 to 12

Sand Paper.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 12 for 30,000 sheets sand paper, delivery Philadelphia, Pa.

School Equipment, Supplies, etc.—Samuel D. Jones, Business Director, Bd. of Education, Administration Bldg., Eighth and Chestnut St., Louisville, Ky.—Bids May 19 for supplementary books, maps and globes, periodicals, lumber, hardware, paper, dry goods and notions, domestic science equipment, manual training equipment, electrical supplies, printing, paints and oils, gymnasium equipment, etc.

Sewage Treatment Plant Equipment.—City of Houston, Tex.—Bids May 14 for sludge dislodger and concentrator equipment at North Side sewage treatment plant; information, etc., at office of City Engr.

mation, etc., at office of City Engr.

Sewer Construction.—Bd. of Awards, Baltimore, Md., Milton J. Ruark, Sewerage Engr.—Bids May 14 for storm drains, Sewer Dist. C-13, Storm Whter Contr. No. 110; work includes 28,200 cu. yds. excavation; 1700 ft. 13 ft. 6-in. x 7 ft. 6-in. and 1897 ft. of 10 ft. x 3-in. x 6 ft. 8-in. rectangular brick and conc. drain; 188 ft. 48-in., 438 ft. of 42-in., 360 ft. of 36-in., 452 ft. of 33-in., dia. rein. conc. pipe drain; 827 ft. of 12-in. and 21-in., 803 ft. of 15-in., vit. pipe drain; 2390 ft. of 8-in. vit. pipe sewer; underdrains, house connections, 42,720 sq. ft. of vit. clay liner plates, etc. liner plates, etc.

Soap (Laundry). — Marine Corps, Q. M. Dept., Washington, D. C.—Bids May 27 for 150,000 lb. laundry soap, and 75,000 lb. soap powder, delivery San Francisco, Calif., Hampton Roads, Va., and Philadelphia, Pa.

Stationery, etc.—Dept. of Education, Office of Bd. of School Commrs., Madison and Lafayette Ave., office of City Register, City Hall, Baltimore, Md.—Bids May 21 for stationery, art classes, kindergartens, mechanical drawing classes and classroom supplies.

Steel.—U. S. Engr. Office, Huntington, W. a.—Bids May 19 for cold rolled and tool steel, etc.

Steel Bars.—Commrs., Dist. of Columbia, Washington, D. C.—Bids May 12 for 205,000 lb. deformed rein. steel bars, for use by

Street.—Baltimore, Md. See Construction ews-Roads, Streets, Paving.

Steel Sections.—Div. of Supplies, Dept. of Commerce, Washington, D. C.—Bids May 13 for 12 steel sections of skeleton construc-

Street.—Gadsden, Ala. See Construction News-Roads, Streets, Paving.

Swimming Pool. — Bd. of City Commrse., City Hall, Laurel, Miss.—Bid May 12 for concrete swimming pool; Paul Klyce, City Engr., P. O. Box 282.

Engr., P. O. Box 282.

Tank and Tower.—City of High Point, N. C.—Bids May 27 for furnishing all materials, labor, equipment, etc. for constructing elevated steel tank on steel tower; work includes all manufacture, fabrication, delivery, erection, painting and testing required; tank will have capacity 1,000,000 gal. and overflow line 163 ft. above top of foundation; also for furnishing all labor and materials for constructing rein. conc. foundation for above tank, including excavation, forms, conc. work, backfilling, etc.; William C. Olsen, Inc., Consit. Engrs., Raleigh.

Tank (Water).—Bd. of Awards, Baltimore, Md.—Bids May 14 for furnishing and erercting steel tank at Curtis Bay; Information, etc. at office of E. G. Rost, Water Engr.

Timber (White Oak).—U. S. Engr. Office, Huntington, W. Va.—Bids May 15 for white oak timber.

Underpass.—Bd. of Awards, Office of City Hall, Baltimore, Md.—Bids May 14 for ped-estrian underpass, Druid Hill Park, for Bd. of Park Commrs.; Winfield F. Courts, Park Engr., Druid Hill Park.

Underpass.—Baltimore, Md. See Construc-on News—Bridges, Culverts, Viaducts.

tion News—Bridges, Culverts, Viaducts.

Water Line.—Bd. of Education, Fairmont Dist., Fairmont, W. Va.—Bids May 15 for installing 8-in. water line along crematory property to Barrackville High School; Henry Scott, Engr., City Bldg.

Water Works.—City of Laurel, Miss., Paul C. Klyce, Engr.—Bids May 12 for water well system; work includes drilling well 700 g.p.m. capacity; installing pumps, etc.

Wire Strand (Galvanized).—U. S. Engr. Office, McCall Bldg., Memphis, Tenn.—Bids May 23 for galv. wire strand.

TRADE LITERATURE

(Continued from page 98)

Agricultural Development.—The spring issue of the Agricultural Bulletin, published quarterly, has been issued by the Agricutural Department of the Atlanta and West Point Railroad Company, the Western Railway of Alabama and the Georgia Railroad.

Spiral Welded Pipe.—A recent edition of the Armco Engineering Bulletin, published by the American Rolling Mill Company, Middletown, Ohio, is devoted to spiral welded pipe, a recent development in pipe line construction, and to engineering data on that product and Armco Ingot iron.

New England Survey. — The Domestic Commerce Division of the United States Department of Commerce recently issued three volumes covering a commercial survey of New England. The publication is entitled "The Industrial Structure of New England." Part 1 is devoted to the industrial structure; part 2 to the commercial structure, and part 3 to market data.

The Aluminum Industry, in two volumes, by Junius David Edwards, assistant director of research, Francis G. Frary, director of research, and Zay Jeffries, consulting metallurgist, all of the Aluminum Company of America, Pittsburgh, has been published by the McGraw-Hill Book Co., New York, Price \$12.00. In preparation of this book, the authors worked in collaboration with a group of staff experts of the Aluminum Company of America, for the purpose of producing a complete and modern handbook of the aluminum industry, covering all phases of production and industrial use of this material. The first volume bears the sub-title "Aluminum and Its Production" and covers the history of the discovery of aluminum and the development of the industry, the ores of aluminum and their mining and refining for the production of pure alumina, and closes with a discussion of the produc-tion of metallic aluminum. The second volume bears the sub-title "Aluminum Prod-ucts and Their Fabrication" and is designed to present a broad view of the various processes by which aluminum is fabricated.

Agricultural Yearbook. - The Department of Agriculture's latest Yearbook of Agriculnow being distributed, surveys agri-Like the yearcultural conditions in 1929. books for the three preceding years, this volume features numerous short articles reporting recent developments in agricultural science and practice. It offers up-to-date information on most of the important phases of agriculture and contains a comprehensive compilation of agricultural statistics. Those who cannot get a copy from a Senator or Congressman, or who are not listed to receive one from some bureau of the department, may get a copy for \$1.50 from the Superintendent of Documents, Washington,

Asbestos-Cement Board. — A new catalog issued by the Ambler Asbestos Shingle & Sheathing Company, Ambler, Pa., and St. Louis, Mo., is devoted to Ambler Linabestos, an asbestos-cement fireproof board for exterior or interior sheathing. The board is hard and dense, of pleasing buff color, and is capable of being sized and painted to conform to various decorative schemes.

Automatic Pressure Switch. — The Allen-Bradley Co., Milwaukee, Wis., manufacturer of electric controlling apparatus, is distributing bulletin No. 830, describing and illustrating the Allen-Bradley automatic pressure switch and accessories for use with automatic motor control for compressors, pumps and other equipment not exceeding 150 pounds pressure per square inch.

Dry Kiln Equipment. — The Moore Dry Kiln Company, Jacksonville, Fla., announces a new line of heavy-duty dry kiln trucks and transfer cars, particularly adapted for use with the new type Moore reversible cross-circulation fan kiln and described in detail in "Moore Facts," issued by the company.

Door Equipment. — The May edition of Door-Ways, a publication of the Richards-Wilcox Manufacturing Company, Aurora, Ill., was recently issued. The company is celebrating its fiftieth year of service in the manufacture and distribution of doors and door hardware.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Pittsburgh Plate Glass Warehouses.

To facilitate a wider distribution of its products, the Pittsburgh Plate Glass Company, Pittsburgh, Pa., is establishing additional warehouses at Roanoke, Va., where it has purchased a building and about completed alterations, and at Nashville, Tenn., where a building will be opened June 1, the Bell Brothers Company, Murfreesboro, Tenn., handling construction. Plans are being prepared for warehouses at Knoxville, Tenn., El Paso, Tex., East Hartford, Conn., North Kansas City, Mo., and Mineola, Long Island, N. Y. William R. Bovard, Kansas City, Mo., is architect for the North Kansas City building, for which bids will be invited about May 15, while the company's architects designed the other structures. Bids will be invited about May 10 on the East Hartford and Mineola buildings.

Changes Name of Manufacturing Division.

H. D. Conkey & Company, Mendota, Ill., manufacturers of Conco industrial products, announce change in name of the manufacturing division from H. D. Conkey & Company to Conco Crane & Engineering Works, division of H. D. Conkey & Company.

New Heltzel Representatives.

The Hetzel Steel Form and Iron Company, Warren, Ohio, manufacturers of steel forms for concrete construction and steel plate fabricating, have appointed the following representatives; Raleigh Tractor & Equipment Co., Raleigh, N. C.; Lombard Iron Works & Supply Co., Augusta, Ga.; Gorman L. Burnett, Inc., Lynchburg, Va., and the Dravo Equipment Co., Pittsburgh, Pa., and Cleveland, Ohio.

Republic Steel Organziation.

T. M. Girdler, chairman of the board, Republic Steel Corporation, Youngstown, Ohio, announces the corporation organiza-tion as follows: B. F. Fairless, first vice president; R. J. Wysor, vice president in charge of operations; H. T. Gilbert, vice president in charge of sales; R. S. Hall and P. Witherow, vice presidents; W. H. Oldham, vice president in charge of the Southern district; J. U. Anderson, treasurer; R. Jones, Jr., secretary; W. B. Ohl, comp troller: W. C. Gubbins, assistant comptroller: A. E. Walker, assistant vice president in charge of sales; W. M. Neckerman, assistant vice president; J. M. Schlendorf, general manager of alloy sales; Norman Foy, general manager of mild steel sales; Harry Rhodehouse, traffic manager; C. A. Ilgenfritz, director of purchases; Walter Mass-man, purchasing agent; C. H. Elliott, man-Warren district; H. B. Carpenter, manager Youngstown district; E. A. Portz, manager Central Alloy district: A. G. Greenamyer, managing Buffalo district; J. L. Hyland, manager Chicago district; Frank Webb, manager ore mining department, Frank George Morse, manager coal mining department; F. M. Cardwell, auditor; B. F. Boyer, assistant auditor; W. B. Knuff, chief cost accountant; E. P. Foley, credit manager; C. D. Reese, assistant credit manager; H. M. Hurd and G. H. Freehorn, assistant treas-

Leffel Testing Flume.

A new testing flume embodying features said not to have been used before is a part of the equipment of the research and experimental department of the James Leffel and Company, Springfield, Ohio. The flume consists of a tank with separate compartments of heavy, rust-resisting steel plates welded together, the lower part of the tank being a reservoir to hold all water required for testing. Water is pumped from the lower reservoir into the upper compartment where the turbine is installed and after passing through the turbine and draft tube it is discharged into an intermediate compartment, all the water eventually returning to the lower reservoir, where it is ready to be pumped again. Plate glass windows at convenient locations permit observation of the turbine and water action, the water being pumped from the lower reservoir into the turbine by a motor-driven screw pump of the company's own desin.

Application of Welding and Cutting.

W. T. Kyle, formerly sales manager of Page Steel and Wire Co., New York, has resigned to become president of the Welding Engineering and Research Corporation with offices at 30 Church street, New York, and engineering and research laboratories at Long Island City, N. Y. The company was organized to cooperate with industry in the safe and economical application of welding and cutting metals and is equipped with departments of engineering, research, cost accounting, advertising and sales. Plans are being made to carry out all principal applications of forge, pressure and fusion welding.

James Verner Scaife.

The William B. Scaife & Sons Company, Pittsburgh, Pa., announce the death on March 31 of James Verner Scaife, president of the company. The organization is a pioneer in the manufacture of tanks, filters, water softeners, etc., having been founded in 1802.

A Normal Business Recession

[From the Bache Review]

Looked at broadly, the present recession in business is merely a swing from excessive production and sales push into a readjusting period necessary to liquidate a position of speculative overproduction. This has to be done by allowing consumption to catch up. Nearly always in such cases consumption itself gets a setback and it takes just so much longer to recover. In such a period, also, what seemed to be reasonable inventories during the rushing activity turn out to be overstock when the consumption falls off. All this will readjust itself, but it takes time. It takes longer than people at first imagine. The real basis of the optimism which exists is the assured conviction that later on—perhaps not till late fall—the thing will straighten itself out.

The stock market has beaten business in the pace of recovery. Business was at its peak last July and has not yet shown much real sign of recovery outside of the seasonal spring advance. The stock market reached its peak in October, had its deep fall, and has now recovered more than half its lost ground. It is fortunate for business and for general confidence that the stock market has shown its faith in ultimate recovery by advancing almost obstinately through the fogs of business hesitation.

Since writing the above, we have received the advance sheets of an address by Dr. Anderson* to be delivered Thursday evening. He shows that the down swing from the peak of 1920 to the trough of 1921 was about 36½ per trough of 1921 was about 36½ per cent. The down swing from the peak of cent. The down swing from the part of 1929 to the end of March, 1930, was approximately 20 per cent. We have had a much less pronounced decline in the current recession of business from the very peak than we had in 1920-21. "Indeed" he adds, "the decline has been less in the current period than was the decline from the peak of 1923 to the trough of 1924, that decline having been about 30 per cent. Recovery was so prompt in 1924, however, that the severity of the extreme low point was not generally recognized. The present depression in the United States is a relatively mild depression."

*Dr. Benjamin M. Anderson, Jr., Economist of the Chase National Bank, in address before the College of the City of New York, April 24.

St. Louis Invites Chemical Industries

St. Louis, Mo.—With a view to attracting chemical industries to the St. Louis district, the Industrial Bureau of the Industrial Club of St. Louis is distributing a booklet on the "Chemical and Mineral Resources of the St. Louis Area." In a period of 60 years, the chemical industry in St. Louis has grown from negligible proportions to an industry whose annual products are valued at \$100,000,000, according to George C. Smith, director of the Bureau. More than 30 firms are listed in the booklet as principal producers of chemicals in the district, with 11 manufacturers'

branches and chemical supply houses. Much of the information was obtained by Dr. Charles W. Cuno, consulting chemical and metallurgical engineer for the Industrial Bureau and a former professor at Washington University.

\$1,000,000 Hotel Being Completed

Abilene, Tex.—The new Hotel Wooten, to cost approximately \$1,000,000, is nearing completion, according to Al Badger, lessee. It will be ready to accommodate visitors to the West Texas Chamber of Commerce convention to be held in this city from May 29 to May 31, inclusive. The structure is 16 stories, of brick, reinforced concrete and steel and contains a theater to seat 1600. The David S. Castle Co., Abilene, is the architect and E. V. McCright, Dallas, general contractor.

Winston-Salem Industrial Commission

Winston-Salem, N. C.—The Industrial Commission of Winston-Salem has organized with Owen Moon, chairman; J. H. Early, secretary and treasurer, and Major A. R. Lawrence, director, to make an adequate industrial survey of Winston-Salem and present facts regarding the city's advantages for new industries. Such information will be disseminated by means of letters, advertising and direct contact and it is estimated that from \$15,000 to \$18,000 will be required for a year's work.

New Lumber Specifications for River Work

Washington, D. C .- As a result of conferences between the United States engineers, the National Committee on Wood Utilization of the Department of Commerce and the National Lumber Manufacturers Association, new specifications involving many millions of feet of softwood lumber used by the United States army engineers for river improvement work have been issued. The specifications cover mattress lumber, one of the biggest items used by army engineers in river work, the lumber being woven into mattresses used to prevent stream bed erosion resulting in collapse of the river banks, and were drawn to conform as closely as possible to American lumber standards.

High Point, N. 'C., Edward M. Knox, city manager, sold \$1,500,000 water and sewer bonds to Caldwell & Co., Nashville, Tenn., at par, accrued interest and a premium of \$2,500, the bonds to bear an interest rate of 5 per cent.

Power Line Crossing with 3780-Foot Span

Algiers, La.-The construction of an aerial crossing to carry a 110,000 volt transmission line over the Mississippi River is involved in plans of the Louisiana Power & Light Company, M. D. Coile, engineer, now building a line from Amite to New Orleans to connect with the system of the New Orleans Public Service, Inc. At the site of the crossing the high water elevation is 10 feet above the general ground level and the War Department requires 150 feet clearance above extreme high water. This necessitated the transmission line towers being 350 feet from the ground to the first cross-arm, with a total height of 417.5 feet. Each tower contains 205 tons of steel and is supported by 252 pilings, 60 to 65 feet, on which concrete anchors are poured. The towers are supporting structures only, as six special 0.886-inch aluminum conductors, steel reinforced, are carried 900 feet back to concrete anchorages, suitable suspension insulators being employed. The total span between towers is 3780 feet, of which 2880 feet are between levee tops. Piling was driven by the Horace Williams Co., New Orleans, while the concrete was poured and wires will be strung by the Phoenix Utility Co., New York. 'The towers were fbaricated and will be erected by the Nashville Bridge Corp., Nashville, Tenn.

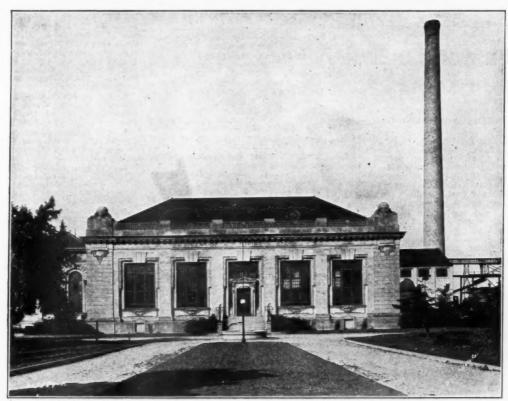
Cotton Growers Lose Millions by Using Jute Bagging

In the course of an open letter addressed to the citizens of the United States, T. H. Thurmond, cotton ginner and manufacturer of Shreveport, La., writes:

"Name one or more Representatives who have fought in the open against the Jute Trust in favor of the cotton producers, and I will pay one hundred dollars to the one who furnishes the name.

"The Senate Finance Committee have 'decreed' that there shall not be any tariff on grass jute, a product from Great Britain, produced by pauper labor at 15 cents per day of 14 hours, which means that 1,000,000,000 pounds of this grass shall be 'dumped' into the United States free of tariff, resulting in a loss to the citizens of the United States of hundreds of millions of dollars in labor and more than one-half billion dollars to the cotton producers, cutting down consumption of cotton 2,000,000 bales, and reducing the price of cotton \$30 to \$50 per bale, causing poverty, bankrupts and suicides; and yet, when this suicidal legislation was adopted by the Finance Committee of the Senate of the United States, not a single protest was made by President Herbert Hoover, nor any member of the Senate, nor by any member of the House."

LEADITE



The Riverside Pumping Station of the Indianapolis Water Co., Indianapolis, Ind.

Indianapolis Water Co. has used LEADITE on 150 Miles of Cast Iron Pipe

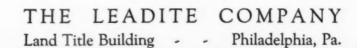
Mr. H. S. Morse, Manager of the Indianapolis Water Company, Indianapolis, Ind., another of the C. H. Geist Properties, and one of the largest privately owned plants in this country (supplying a population of approximately 400,000) advises us in a recent letter, as follows:

"We have laid 150 miles of cast iron pipe during the past 5½ years in which Leadite has been used as a jointing material. The sizes of pipe ranged from 6" to 36". These pipes have been used under pressures of from 60 to 100 pounds and we have found the tightness of the joints to be satisfactory."

The pioneer self-caulking material for c.i. pipe.

Tested and used for over 30 years.

Saves at least 75%





No Caulking

FINANCIAL NEWS

Bond Issues Proposed

Ala., Mobile—Bridge—Mobile County Bd. of Revenue considering \$1,109,000 bond election; John R. Peavy, County Highway Engr.

Ark., DeQueen — Courthouse, Jail—Sevier County Court receives bids May 31 for \$110,-000, 5% bonds.

Ark., Pine Bluff—Library—City. R. E. Lee, Clk., receives bids May 12 for \$63,000 bonds.

Ga., Cartersville—City, John W. Dent, Clk.. receives bids May 19 for \$100,000, 5%, \$1000 denom. municipal bonds.

Ga., Dalton—School—City votes May 14 on \$95,000 bonds; lately noted defeated bond

Ky., Graham—Muhlenberg County Bd. of Education, Greenville, will call election May 10 on \$21,000 Graham Consolidated School Dist. No. 9 bonds.

Ky., Monticello - Monticello School Dist. voted \$10,000 bonds.

La., Logansport—De Soto Parish, Dept. Education, S. M. Shows, Supt., receives b May 27 for \$35,000, \$1000 denom. not exceed 6% Logansport School Dist. bonds.

La., Many—Sabine Parish School Bd., G. C. Reeves, Sec., receives bids May 14 for \$10,000, Belmont School Dist. bonds.

\$10,000, Belmont School Dist. bonds.

La., Shreveport—Caddo Parish School Bd.,

E. W. Jones, Supt., receives bids in June for School Dist. No. 3 bonds.

Md., Annapolis—State of Maryland, John M. Dennis, Treas., receives bids June 3 for \$2.245,000. 4½%, \$1000 denom. certificates of indebtedness: \$750,000, Bridge Loan of 1929: \$750,000, Post Road Loan of 1929: \$745,000, Special Road Construction Loan of 1929.

Okla., Elk City—Memorial Park—City considering \$25,000 bond election.

Okla., Sand Springs—Bd. of Education E. F. Dixon, Clk., receives bids May 12 (\$41,000 bonds.

Okla., Sayre—School—Town voted \$32,000 bonds.

Tenn., Franklin — Water — City votes in June on \$75,000 bonds.

Tenn., Lewisburg—School—Marshall Coun-plans voting soon on \$50,000 bonds.

Tenn., Livingston — Town, A. F. Officer. Mayor, called election for May 31 on \$50,000 water bonds. Tenn., Pulaski — Town. Lew Jones, Recorder, voted \$15,000 right of way bonds. 4-10

Tenn., Savannah—Highway—Hardin County Revenue Commrs., L. L. Herbert, City Judge, receives bids May 27 for \$200,000, 5% bonds.

5% bonds.

Tex., Ackerman — Water — Town defeated \$\frac{15}{15},000\$ bond issue; lately noted to vote Apr. 4-24

Tex., Beeville—Road—Bee County Commrs. probably call election in June on \$325,000 bonds in Road Dist. No. 1.

Tex.. Big Spring—City. V. P. Smitham, Mgr., rejected bids for \$265,000, 5% improvement bonds, and \$125,000, school bonds.

4-3, 4-17

Tex., Brackettville — Brackettville Inde-ordent School Dist. voted \$40,000 bonds: 7. W. Price, Sec. 3-17

Tex., Brownsville—Navigation Dist. Commrs. called election for May 29 on \$1.500.000 bonds for Brownsville port project, including construction of wharves, docks, warehouses, grain elevators, towing facilities, etc. 4-3

Tex., Brownsville—Cameron County Commrs. Court, Oscar C. Daney, County Judge. considering bond issue for jail, and \$350.000 bond issue for highway.

Tex., Brownwood — Woodland Heights School Dist., Brown County, voted \$24,000 bonds.

Tex., Bryan-School-City voted \$100.000

Tex., Corpus Christi—Road—Nueces County Commrs. Court. Roy D. Clift, County Clk.. rejected bids for \$625,000 of \$2,500.000 bonds, previously voted 12-12

Tex., Donna—Bd. of Directors, Donna Irrigation Dist. No. 1, receives bids May 12 for \$1.700,000 6% imporvement bonds.

Tex., Fort Worth—City, O. E. Carr. Mgr., plans selling, before last of June, \$1,000,000 or \$1,200,000 bonds, previously voted for airport, street and fire protection system; D. L. Lewis, City Engr.

Tex., Galveston — Hospital — Galveston

County, I. Predecki, County Auditor, voted \$65,000 bonds.

Tex., Houston—Bd. of Trustees of Harris County Rural High School Dist. No. 2, C. E. Davis, Sec., receives bids May 15 for \$120,000, 5% bonds.

Tex., Huntsville — Road—Walker County, P. H. Singletary, County Judge, receives bids May 12 for \$50,000, 5% bonds.

Tex., Huntsville — Road — Walker County Commrs. Court, P. H. Singletary, County Judge, receives bids May 12 for \$50,000 5% bonds.

Tex., Kountze-Road-Hardin County considering \$2,000,000 bond election.

Tex., Lubbock—Jail, Courthouse—Lubbock ounty defeated \$250,000 bond issue; Robert Besn, County Judge. 4-10

Tex., Mart—Ben Hur School Bd. called election for May 17 on \$35,000 bonds.

Tex., Mercedes — Mercedes Independent School Dist. voted \$250,000 bonds; Fred Johnston, Sec., receives bids May 27 for \$250,000, 5%, \$1,000 denom. bonds. Tex., Morse — Morse Independent School ist. voted \$40,000 bonds. 1-23

Tex., Riesel — Riesel Independent School Dist. voted \$25,000 bonds.

Tex., San Angelo—School—City, E. E. Lowrie, Mgr., receives bids May 13 for \$150,000 5% bonds; S. W. Marsh, Pres. Bil. of Education.

Tex., Santa Maria—Santa Maria Water Control and Improvement Dist. No. 4, Cam-eron County, voted \$50,000, 6% improvement

Tex., Shallowater—School—City voted \$55,-00 bonds; T. C. Calley, Pres. School Bd. Tex., Wheeler—Briscoe Consolidated School ist., Wheeler County, voted \$32,000 bonds.

Va., North Tazewell—City votes May 10 on \$18,000 bonds; \$13,000, school; \$5000, fire fighting equipment.

Bond Issues Sold

Ark., Earle—City sold paving bonds to Southern Securities Co., Little Rock.

Ark., Mena—Water—City, W. N. Martin, Clk., sold \$40,000, 6% bonds to M. W. Elkins & Co., Little Rock, at \$42,000.

Fla., Fort Lauderdale — Broward County Port Dist., C. C. Freeman, Chmn., sold \$28,000 of \$275,000, 6% Port Authority bonds to Lake Worth Inlet Dist.

Co., Camilla, Compiler Consolidated School.

to Lake Worth Inlet Dist.

Ga., Camilla—Camilla Consolidated School Dist. sold \$115,000, 5% bonds to First National Co., Atlanta, at \$1810 premium.

Md., Cumberland—City, Samuel Wertheimer, Commr. of Finance and Revenue, sold \$175,000, 4½% bonds to Harris, Forbes & Co., New York City, at 104,159 and accrued interest: \$100,000, water bonds of 1929; \$75,000, water bonds of 1924.

0, water bonds of 1924.

Md., Salisbury—City, E. J. C. Parsons, reas., sold \$25,000, 4½%, \$1000 denom. wer bonds to Robert Garrett & Sons. Baltiore, Md., at 100.499 and accrued interest.

4-17

Miss., Fayette—Town, E. H. Reber, Clk., sold \$10,000, 51/2 %. Fayette Separate School Dist. bonds to Peoples Bank & Trust Co., Fayette, at \$50 premium.

N. C., Charlotte—Mecklenburg County Commrs. sold \$100,000, 44% tax anticipation school notes to American Trust Co. at \$12.-00 premium.

00 premium.

N. C., Lexington—School—Davidson County Commrs. sold \$115,500, 4\% %, \$1,000 denom. bonds to Mercantile Commerce Co. St. Louis, Mo., at \$117,136 and accrued 4-17

interest.

N. C., Louisburg — Franklin County Commrs., C. L. McGhee, Chmn., sold \$60,000, 5% revenue anticipation notes to W. O. Gay & Co., New York, at premium of \$5.

N. C., Smithfield—Johnston County sold \$370,000, 44% revenue anticipation notes to Bray Bros. & Co., Greensboro, at \$100 premium

Okla., Claremore—Water—City, J. M. York, Clk., sold \$235,000 bonds to American First National Co., Oklahoma City, \$180,000, 51/4%, \$55,000, 5%.

Okla., Edmond—Edmond School Dist. sold \$28,500 4½ and 5% bonds to Brown-Crummer Co., Wichita, Kansas, at \$16° premium.

Okla., Hardesty.—Texas County sold \$36. 90 Hardesty Consolidated School Dist. No. 5 bonds to American First Trust Co., Okla-oma City, \$12,000, 5%; \$24,000, 5½%. Okla., Tulsa—City, Dan W. Patton, Mayor,

sold \$1,310,000 bonds to syndicate headed by First National Bank & Trust Co., Tulsa; Prescott, Wright, Snider Co., Kansas City; American Trust Co., C. Edgar Honnold, Brown-Crummer Co., and R. J. Edwards, Inc., all Oklahoma City; \$40,000 traffic signals; \$60,000, convention hall; \$200,000, parks; \$160,000, municipal hospital; \$400,000, storm sewers; \$450,000, paving; K. R. Tels, City Engr. 4-24

S. C., Hampton—Bd. of Trustees, J. H. Lightsey, Sec., sold \$10,000, 6% Brunson School Dist. No. 14, Hickory Grove School Dist. No. 1, and Dry Swamp School Dist. No. 22 bonds to J. H. Hilsman & Co., Atlanta Ga., at \$20 premium.

S. C., Jonesville — Trustees of Jonesville School Dist. No. 12, C. A. Littlejohn, Sec., sold \$45,000, 5½% bonds to South Carolina National Bank, Greenville, at \$45,700 and accrued interest.

S. C., Camden—Kershaw County Bd. of Education, K. B. Watts, County Supt., sold \$40,000, 6% School Dist. No. 14 bonds to Bank of Camden at \$500 premium.

Bank of Camden at \$500 premium.
S. C., Columbia—Street—City, G. Flavie Cooper, Cik. Treas., sold \$72,000, 4% % bonds to South Carolina National Bank at par and 5-1 \$1,170 premium.

8. C., Spartanburg—Spartanburg County Bd., J. L. M. Williams, Clk., sold \$660,000, 4½% general obligation bonds, jointly, to C. F. Childs & Co., Chicago, and G. L. Craw-ford & Co., Columbus, at 99.41.

Tenn., Knoxville—City, George Dempster, Mgr., sold \$1.000.000 revenue anticipation notes to Bancamerica-Blair Corp., New York, at \$25 premium.

Tex., Columbus—Colorado County sold \$425,000 Road Dist. No. 3 bonds to Garrett & Co., Inc., Dallas, at \$10,361 premium.

Tex., Galveston — Stranahan, Harris & Oatis, Inc., Toledo, purchased remaining \$400,000 of \$700,000 road bonds, offered in Jan., option given to them in March, when they purchased \$300,000 bonds at par, accrued interest.

Tex., Jasper—City, reported, sold water and sewer bonds to Commercial Trust Co., Kansas City, Mo.

Tex., Matador—Bd. of Education, Henry Willett, Sec., sold \$60,000, 5%, \$1000 denom. Matador Independent School Dist. bonds to H. C. Burt & Co., Houston, at 99.

Tex., Port Arthur — City, J. W. O'Neal, Mayor, sold \$1,305,000 bonds to Eldredge & Co., New York, at par and accrued interest: \$300,000, Pleasure Pier Bridge: \$580,000, street; \$280,000, drainage; \$30.000, parks; \$78,500, water extension; \$36,500, sewer extension.

Va., Abingdon—Washington County School Bd., W. J. Edmondson, Supt., sold \$84,000, 5% refunding bonds to Seasongood & Mayer. Cincinnati. at par, accrued interest and pre-mium of \$693.85.

Va.. Marion—Jail—Smyth County Bd. of Supyrs., H. L. Kent, Clk., sold \$28,000, 6% bonds to V. L. Sexton, Bluefield, Va., at \$500 premium. \$500 premium.

Va., Norfolk — City, I. Walke Truxtun, Mgr., sold \$500,000, 4% tax anticipation notes to R. W. Pressprich & Co., New York,

Building and Loan Associations

Tex., Jasper—Jasper Loan & Investment o., capital \$25,000. chartered; W. P. and v. L. Smith, L. J. Fortenberry.

New Financial Corporations

Ky., Richmond—Madison Southern National Bank & Trust Co., Southern National Bank Bldg., capital and surplus \$340,000. formed with B. M. Igo. Pres., by consolidation of Madison National Bank and Trust Co., Waller Bennett, Pres., and Southern National Bank, B. M. Igo, Pres.

La., Shreveport—Acme Land & Investment Co., Inc., capital \$1.000,000, chartered; R. O. Ry, L. J. Langenstein.

La., Winnfield—Bank of Commerce, capital \$25,000, chartered; A. L. Bryan, Mrs. W. R.

Md., Salisbury-Horsey & Co., Inc., Salisbury Building & Loan Bldg., organized; M. C. Horsey, Mgr.

N. C., Greensboro—Greensboro Industrial Bank, capital \$1.000.000, chartered; E. G. Michaels, Piedmont Bldg. N. C., Greensboro—North Carolina Indus-

(Continued on page 106)



EFFLORESCENCE is due to the presence of soluble salts in masonry materials.

Brixment never causes efflorescence because it contains less than ½ of 1% of these salts.

Even if salts are present in other materials used, Brixment's water-repellent quality helps to prevent their coming to the surface.

Send today for book describing other advantages of Brixment for masonry and stucco. Louisville Cement Company, Incorporated, Louisville, Kentucky.

CEMENT MANUFACTURERS SINCE 1830

BRIXMENT



FINANCIAL NEWS

(Continued from page 104)

trial Bank, authorized capital \$1.000.000. formed; E. G. Michaels, Pres.; subsidiary of North Carolina Bank & Trust Co., W. S. Ryland Pres. land. Pres.

N. C., Monroe-Angus W. McLean and W. S. Ryland, Chmn. of Bd. and Pres., respectively, of North Carolina Bank & Trust Co., considering establishing bank at Monroe.

Okla., Frederick—First National Bank, J. L. Lair, Pres., formed by merger of First National Bank and National Bank of Commerce, R. L. Chase, Pres., with \$1.250,000 resources and increased capital of \$100,000.

Tenn., Daisy—Bank of Daisy, W. R. Roberts, Pres., re-opened; Macon Roberts, in charge as acting cashier.

Tex., Henrietta—First National Bank of tenrietta, capital \$25,000, organized; Earl Hall, correspondent.

Tex., Houston-Sterling and Baker Securi-es Corporation organized; B. Frank Ster-ng, Harry V. Baker, both Post-Dispatch

W. Va., Lewisburg—Greenbrier Valley Bank, capital \$50,000, chartered; Gory Hogg, Lewisburg; F. D. Drumheller, John L. Dick-inson, both Charleston.

Hamilton National Associates, Inc., Chattanooga, Tenn., purchased First National Bank, T. A. Pope, Pres., Pikeville.

Financial Notes

Central Power and Light Report.

An increase of more than 100 per cent in the amount of electricity sold by the Central Power and Light Company, San Antonio, Texas, in 1929 as compared with 1928, ac-Antonio. cording to the company's annual report, indicates a rapid growth in the territory served by the company. Gross operating revenue for 1929 amounted to \$9,402,692. Stock sales to customers and employes amounted to 9203 shares in 1929, as compared with 3400 shares in 1928. The company was serving 170 com-munities at the end of 1929, an increase of 19 over 1928, ten of the communities being given their first electric service last year. A total of 446 miles of transmission line was constructed during 1929 and the kilowatt hour sales increased from 82,937,918 in 1928 to 166,020,168 in 1929. Improvements were to the company's rural service and notable extensions made to its ice service and water systems.

Missouri Pacific Railroad Report.

Operations of the Missouri Pacific Railroad Company for 1929 show a substantial increase in the volume of freight traffic handled and in gross and net income, according to the company's annual report. Regular dividends each of 1¼ per cent, aggregating 5 per cent, or \$3,545,532, and a dividend of 1¼ per cent, or \$1,063,663, on account of unpaid accumulated dividends, were declared on the preferred stock. Total railway operating revenues amounted to \$139,807,914 for the year, as compared with \$131,576,525 for 1928, an increase of \$8,231,389, or 6.26 per cent, while the increase in freight revenue was \$6,956,-935, or 6.48 per cent. Gross income for the year amounted to \$30,001,390, as compared with \$25,385,138, and the net income transferred to profit and loss was \$12,217,763, as against \$9,512,690 for 1928. Expenditures included the construction of 16.8 miles of second main track between Allenton and Boles, Mo., in continuation of a program to double track the line from St. Louis to Jefferson

City, Mo.; raise tracks above high water; apply rock ballast and rip rap in overflow territory, and complete the installation of 248 miles of automatic block signals.

Atchison, Topeka and Santa Fe Report.

The average mileage operated by the Atchi-Topeka and Santa Fe Railway System during the fiscal year ended December 31, 1929, was an increase of 323 miles over the average mileage operated in 1928, according to the annual report of the company. Expenditures for additions and betterments and for road extensions during the year amounted to \$29,828,590. The construction of a line from Magnet to Thompsons is expected to be completed to a function with the Texas and New Orleans Railroad at Guy, Texas, by June 1, a distance of 18 miles, while a 25-mile extension of the Clinton and Oklahoma Western Railroad from Cheyenne, Okla., to the Texas line was completed, as was a 57-mile line built to a connection at Pampa, Tex., with the Panhandle and Santa Fe Railway. Lines of the Kansas City, Mexico and Orient Railway and the Kansas City, Mexico and Orient Railway of Texas were leased respectively by the Atchison, Topeka and Santa Fe and the Panhandle and Santa Fe and are now operated as a part of the system. A 65mile extension of the Texas company from San Angelo to Sonora will be ready for operation by June 1, and an 86-mile extension from Alpine to Presidio, Tex., will be ready about November 1. Second track mileage in operation December 31, 1929, was 1792 miles and the construction of 22 miles additional second track mileage east of Winslow, Arizona, is contemplated this year. Operating revenues for the year amounted to \$267,189,-178, as compared with \$247,632,836 for 1928, while the gross income for 1929 was \$74, 480.244, as against \$61.556,782 in 1928. The net corporate income, representing the amount available for dividends and surplus, was \$61, 036,803 for 1929, as compared with \$49,930,-

\$1,310,000 Tulsa Bonds Sold

Tulsa, Okla.-On the basis of a sliding interest rate from 4.75 to 4.5 per cent at maturity, the First National and Exchange National Company, Tulsa, the Prescott, Wright Snider Company, Kansas City, Mo., the American-First Trust Company, C. Edgar Honold, and R. J. Edwards, Inc., all of Oklahoma City, and the Brown-Crummer Company, Wichita, Kans., have purchased an issue of \$1,310,000 Tulsa improvement bonds, including \$40,000 for traffic signals; \$60,000, convention hall; \$200,000, parks; \$160,000, hospital; \$400,000, storm sewers, and \$450,000 for general improvements, streets, etc.

Orders For Electrical Goods

New orders booked during the first quarter of 1930, as reported to the Department of Commerce by eighty-one manufacturers of electrical goods, were \$298,733,208, as compared with \$288,-696,415 for the last quarter of 1929 and \$322,424,619 for the first quarter of 1929.

New Electric Refrigerator.

The Frigidaire Corporation, Dayton, Ohio, announces a new de luxe electric refrigerator with five compartments, four temperatures, two humidity ranges and special storage for bottled goods, frozen foods and ice cubes.

Tie Tamper Patent.

According to reports, a suit instituted by Fanny Minton Vaughan and the Ingersoll-Rand Company, New York, against the Gardner-Denver Company for infringement of a Vaughan tie tamper patent, has been decided in favor of the plaintiffs by the United States District Court of Delaware. The Ingersoll-Rand Company is said to be the principal licensee under the patent.

St. Louis Company In New Plant

St. Louis, Mo .- The Puhl & Hepper Manufacturing Co., Inc., of this city, will occupy a new \$100,000 plant at Florissant and Acme avenues, and increase its production of such specialized items as dryers, mullers, blow-pipe systems, spray booths, heating equipment, ventilating systems, sheet metal work and kindred lines. The building is fireproof and of the daylight type, equipped with cranes and material handling devices. It will be equipped with a Puhl & Hepper heating system, incorporating both steam and direct fired fan blast features, for demonstration to prospective buyers. With 20,000 square feet of floor space, machinery is arranged to expedite rapid service and delivery, the plant being equipped with railroad facilities with a spur leading directly into it. A laboratory of 5000 square feet of floor space is specially equipped for testing new equipment and in conjunction with the plant there is a large plot of ground which will be used for a golf course and airplane landing field for the convenience of customers and the sales staff.

NOW READY

The enlarged annual edition

American Bank Reporter (Blue Edition)

and Attorney List 1930 Issue

PRICE \$12.00 A COPY Corrected up to date of issuance

CONTENTS:

CONTENTS:

A complete list of Banks, Bankers, Savings Banks, Principal Loan, Investment, Safe Deposit and Trust Companies in the United States and Canada, with names of Officers, Capital, Surplus, Undivided Profits, Loans, Deposits, Principal Correspondents, Attorney List, Banking Laws and other general Banking Information.

Order Your Copy Today Steurer Publishing Co. 149th Street and Bergen Avenue New York City

The South's Business

Our experience and success warrant our wanting to identify this bank further with the business and progress of the South.

Inquiries about our service will be treated as coming from friends.

BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President

26 South Street, Baltimore. Md.

Capital and Surplus \$1,350,600.00

Member Federal Reserve System

X/E extend the facilities of our organization to those desiring information or reports on companies with which we are identified.

Electric Bond and Share Company

Two Rector Street

THE OSCAR T. SMITH & SON CO.

Manufacturing

BANK AND COMMERCIAL STATIONERS

407-9-11 E. Saratoga Street BALTIMORE, MD.

CHARACTER

QUALITY

-SERVICE-

Corporate Financing Arranged

Mergers and Reorganizations Effected

With connections seeking extensive outlets in constructive financing in the South, this announcement of facilities now available to Southern business houses embraces a most cordial invitation to investigate the solutions offered in response to capital needs. Capital furnished for both new and old enterprises.

WILLIAM AKERS

Long Distance Local Phone WAlnut 3186 1314-15 Atlanta Trust Co. Bldg. ATLANTA, GEORGIA

THE ROBINSON-HUMPHREY COMPANY MUNICIPAL AND CORPORATION BONDS Established 1894 ATLANTA, GA.

We Underwrite MUNICIPAL BONDS in States of GEORGIA and SOUTH CAROLINA

We Buy Bonds

City, County, School and Road from Municipalities and Contractors WRITE

THE PROVIDENT SAVINGS BANK & TRUST CO.

YOUNG & SELDEN COMPANY

MANUFACTURING

Bank and Commercial Stationers BALTIMORE, MD.

Municipalities Corporations Railroads

Financed

MARX & CO.

BIRMINGHAM **ALABAMA**

BANKS and Financial organizabusiness in the South will find an advertisement in the Manufacturers Record a means of contact carrying with it an atmosphere of responsibility and dignity.

> May we discuss this with you?

MANUFACTURERS RECORD

WE PURCHASE ISSUES OF SPECIAL ASSESSMENT BONDS AND ADVANCE FUNDS TO RESPONSIBLE CONTRACTORS ACCOUNT CONSTRUCTION COSTS SUCH ISSUES

CORRESPONDENCE WITH US INVITED

S.G.GARRAWAY & COMPANY

208 SO. LASALLE ST .- CHICAGO, ILLINOIS

W. O. GAY

H. D. MONTGOMERY

G. C. DEMORRET

MUNICIPAL NOTES

COMMERCIAL PAPER
COLLATERAL LOANS

W. O. GAY & CO.

27 William Street, New York

53 State Street, Boston

1418 Walnut Street, Philadelphia



ATLAS POWDER COMPANY

WILMINGTON DELAWARE

April 15, 1930

Manufacturers Record, Baltimore, Maryland.

Gentlemen:

I have been diligently using your Daily Construction Bulletin for some months and find it a source of real value, both directly and indirectly, in following thru sales opportunities. This bulletin gives us about the most complete, authentic and early information regarding construction work in which we are interested and I would feel very much handicapped in my work were I compelled to do without it.

I feel that it is due you to be informed of the complete, satisfactory service that you are rendering us and for this reason I am writing you as above. I also wish to congratulate you on the accuracy and earliness of the information secured from this bulletin.

Yours very truly,
ATLAS POWDER COMPANY,

Frank Rinehart, SPECIAL SALES AGENT.

FR:C.

AN ANNOUNCEMENT

TO ALL WHO ARE INTERESTED IN COTTON

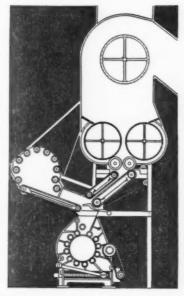
The Clayton (Round Bale) Press is offered for general sale to ginners everywhere.

The press is placed on the market after seventeen years of convincing research and experiment. It is presented to the ginning industry as a machine thoroughly tested by actual gin installations over a long period of time . . . as a perfected piece of gin equipment.

The Clayton Press puts up a two hundred and fifty pound round bale com-

pressed to high density in the original operation at the gin. The bale is completely covered with a closely woven, light, inexpensive bagging; it is easily handled by one man; it eliminates all further compression at inland and port compresses.

Completely covered, easily handled and stored, compressed to high density at the gin, the bale put up on a Clayton Press eliminates country damage and avoids costly rehandling.



The principle of high density compression at the gin is economically sound and right.

Lessees and owners of Clayton Presses (high density gin compresses) in Texas receive from railroads, as compression allowance, 18 points, or approximately 45c. per round bale. In Oklahoma and other States, round bales are shipped at a tendered, compressed rate which is 18 points, or approximately 45c. less than the rate applying to flat square bales; this means that the shipper in these States also directly benefits from a compression allowance.

The ginner who puts up in round bales the equivalent of 6000 square bales of cotton receives in various freight and railroad allowances within a few dollars of the purchase price of a Clayton Press.

The price of a Clayton Press, complete, including condenser, bat former and accumulator is \$5500, f. o. b. San Antonio, Texas.

A Clayton Press makes a good gin better

CLAYTON GIN COMPRESS CO.

P. O. BOX 1406, HOUSTON, TEXAS

A SUBSIDIARY OF ANDERSON, CLAYTON & CO.

190-MILE OIL PIPE LINE

Pure Oil Company Developing Van Field in Texas

Chandler, Tex.—Plans for further development of the Van oil producing field in northeastern Texas call for construction of a 10-inch line from Chandler to the Smiths Bluff refinery, a distance of approximately 190 miles. The company last year completed a 10-inch line from Van to Chandler, a distance of 20 miles, with gathering lines, tank farm at Van, loading rack at Chandler for loading 50 tank cars at one time, and other facilities. The new line will be an extension of the Van-Chandler line and will be owned by the Pure Van Pipe Line Co., a new subsidiary of the Pure Oil Co., with offices in Beaumont, Tex., in charge of W. M. Averill, vice-president in charge of operations. The survey and profile of the route have been completed and it is expected the line will be in operation by July 1.

Pipe is being supplied by the A. O. Smith Corp., Milwaukee, Wis., and pumps by the Worthington Pump & Machinery Corp., New York. Construction will be handled almost entirely by company forces. Excavation will be done by self-propelled ditching machines and the pipe handled and laid by crawlertype tractors with side booms and winches. Field joints in the pipe will be electrically welded. Oil will be pumped through the line by three main line pump stations-one at the Van tank farm, one about 67 miles farther down the line and one about 74 miles from Smiths Bluff-each to be equipped with three specially designed electric-driven centrifugal pumps. Each pump will be capable of producing a pressure increment of 400 pounds per square inch and with two of the three pumps operating in series each station will deliver a total pressure of 800 pounds per square inch into the line. The line will be operated as a closed system with one station delivering oil directly to the suction

of the next station. Pump buildings will be of modern design and construction and three dwellings will be erected at each station for operators. Mr. Averill will have direct supervision of line construction, while J. H. Heslar, engineer of the company, will supervise construction of pumping stations.

Keeping Up Iodine Work

[From Augusta Chronicle.]

The people of this section of Georgia—and certainly we hope of all South Carolina—have been watching with cordial interest the progress of the promotion work in the matter of iodine in the Palmetto state. It is gratifying to note that the South Carolina legislature has continued its development work and provided \$50,000 again to keep up the work.

Last year the legislature appropriated \$50,000 to be divided half and half in research and advertising. If the farmers and producers of South Carolina will seize their opportunity and capitalize the advantages offered through this source there will "millions in it." While the producers will be getting fine returns the people of the nation who need iodized vegetables and fruits will be beneficiaries also. It will be like a two-edged sword, cutting for the good of all, both ways.

If the development in fruit and vegetables grows on a scale commensurate with the needs of the country there will be dozens of canning plants and in addition immense quantities of fresh fruits and vegetables will be sent out of the state. The result in such a case would justify the state in expending ten times the amount of money now appropriated for the cause. It would mean the bringing in of much new money to the state and there would be no need of exploitation and selling expense, because the state's activities would insure full sale of everything produced.

It is fine to see South Carolina's legislature continue the work. The four Southeastern states of Georgia, Alabama and Florida, added to Carolina, have virtually the same food products, but South Carolina is entitled to the palm and the magnificent lead it has taken in the work calls for commendation from this entire section.

\$2,500,000 Program Under Way

Charleston, S. C .- As a part of the 1930 construction program of the South Carolina Power Co. to involve a cost of approximately \$2,500,000, a few of the more important projects now under way include the following: Meggetts, Ravenel and Yonges Island extension: reconstruction of distribution system at Springfield, S. C.; installation of 44 kv. substation at Seminole Mills, Clearwater, S. C.; Summerville highway extension, 3.5 miles; 1000 kva. substation at Williamson Mills, Charleston; erect building and install oil engine plant and distribution system at McClellanville, S. C., and reconstruct distribution system at Summerville, S. C. Contracts for all these jobs were awarded to the Allied Engineers, Inc., Charleston.

\$700,000 Hotel for Richmond

Richmond, Va.—Plans have been prepared by Marcellus E. Wright, local architect, for an 8-story and basement hotel at the southeast corner of Eleventh and Bank streets, to involve an outlay of approximately \$700,000 for the site, building and equipment. Properties on which the structure will be erected are owned by Davis Brothers, A. Hoen and Company and Samuel R. Carter, all of whom are said to be interested in financing the project. Garrett & Company are handling real estate details.

New Mississippi Hotel Opened

West Point, Miss.—The new Henry Clay Hotel was recently opened here. The structure contains 63 rooms and baths. Weiss, Dreyfous, & Seiforth, Inc., New Orleans, La., were the architects and Sandquist & Snow, Alexandria, La., general contractors. Farrell & Moss, Louisville, Ky., and Nashville, Tenn., are the lessees and Woodson Moss is the resident manager. The project is a community enterprise, with 110 stock-holders.

Improved Steel Log and Cylindrical Washers, Combined Scrubbing and Washing Screens

These machines are based on 50 years experience in building heavy, rugged machines for economically washing hematite, manganese and gold ores, limestone, sand, gravel, peat, etc.

Write for catalogs and information on Pit, Mine Quarry and Industrial Equipment, crushers, ore figs, screens, dryers, hoists, etc.

McLanahan and Stone Machine Company
Hollidaysburg, Pa.



FIRE CLAY, SEWER PIPE, FLUE LINERS and WALL COPING

Write for Catalogue and Discounts

Owensboro Sewer Pipe Co. Owensboro, Ky.



PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



Bids close May 19, 1930.

\$100,000 5% Municipal Bonds

Cartersville, Ga.

Cartersville, Ga.

Cartersville, Ga.

Sealed bids will be received at the office of the City Clerk of the City of Cartersville, Georgia, until 7.30 o'clock P. M., May 19, 1930, for the purchase of \$100,000.00 of City of Cartersville bonds of the denomination of \$100.00 each, numbered 1 to 100, inclusive, to be dated July 1, 1930, bearing interest at the rate of 5% per annum, payable January 1, 1931, and sem-annually on the 1st day of July and the 1st day of January each year thereafter, the principal to be paid \$400.00 January 1, 1932, and \$400.00 January 1st each year thereafter to and including 1956, said bonds to be of coupon form but registerable as to principal and interest, and to be payable at the Hanover National Bank in New York City.

These bonds were validated by judgment of the Superior Court of Bartow County, Georgia, on the 26th day of April, 1930.

Each bid must be accompanied by certified check, payable to the City of Cartersville, for one per cent of the amount of bonds bid for. The city reserves the right to reject any or all bids.

All bids should be marked "Bid for Bonds" and securely sealed and addressed to John W. Dent, City Clerk, Cartersville, Georgia.

The bids will be opened at the City Council room immediately after 7.30 o'clock P. M., May 19, 1930.

BOARD OF ALDERMEN.

Bids close May 13, 1930.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS STATE OF MARYLAND STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

Baltimore, Md.

SEALED PROPOSALS for building five sections of State Highway as follows:
Baltimore City—Contract No. BC-87-72—
One section of State Highway along Caton Avenue, from Wilkens Avenue to the Washington Boulevard, a distance of 1.2 miles (sheet asphalt).

Dorchester County, Contract No. D-57-12—
One section of State Highway along the Flinchville-Reliance road, from the end of Contract No. D-48 toward Reliance, a distance of 1.0 mile (concrete).

Frederick County, Contract No. F-148-52—
Federal Ald Project 208A—One section of State Highway along the Johnsville-Union Bridge road, from the end of Contract No. F-99 to the beginning of concrete near Union Bridge, a distance of 2.0 miles (concrete).

Queen Anne's County, Contract No. Q-42-22—One section of State Highway from the Centreville-Wye Mills road toward Starr, a distance of 1.5 miles (concrete).

St. Mary's County, Contract No. SM-60-84—One section of State Highway from the end of Contract No. SM-42 at Hermanville, South, a distance of 1.0 mile (gravel).

Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M., E. S. T., on the 13th day of May, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and

time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

central Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 29th day of April, 1930.

G. CLINTON UHL, Chairman.

L. H. STEUART, Secretary.

GENERAL INFORMATION

About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday. FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close May 14, 1930.

OFFICE OF THE ARCHITECT OF THE CAPITOL. Washington, D. C., April 23rd, 1930. SEALED BIDS will be opened in this office at 3 P. M., May 14th, 1930, for clearing the site, excavating and foundation work for the new office building for the House of Representatives, to be built on Square 689, Washington, D. C. On or after May 1st, 1930, drawings and specifications, not exceeding three sets, may be obtained at the office of the Architect of the Capitol, in the discretion of said Architect, by any satisfactory general contractor. A payment of ten dollars (\$10.00), which will be retained by the Government, will be required for each set of drawings and specifications; each set to become the property of the bidder. Checks in payment therefor to be made payable to the order of David Lynn, Architect of the Capitol.

Bids close May 21, 1930.

Eastern Avenue Underpass

DEPARTMENT OF PUBLIC WORKS BUREAU OF HIGHWAYS

Baltimore, Md., April 30, 1930.

BUREAU OF HIGHWAYS

Baltimore, Md., April 30, 1930.

Sealed proposals in duplicate for the construction of the Eastern Avenue Underpass in the City of Baltimore, Maryland, in accordance with the plans and specifications on file in the office of the Bureau of Highways, Room 303 Municipal Office Bullding, Baltimore, Maryland, will be received at the office of the City Register, City Hall, Baltimore, Maryland, will be received at the office of the City Register, City Hall, Baltimore, Maryland, until 11 o'clock A. Mc. Eastern Standard Time, Wednesday, May 21, 1930, when they will be opened publicly and read by the Board of Awards.

The Underpass will be 77 feet wide, 1933 feet long, with a center ramp and three bridges carrying railroads across Underpass. Complete sets of plans, specifications, proposal, agreement and bond forms can be obtained at the Bureau of Highways, Room 303 Municipal Office Building, Baltimore, Maryland, upon the payment of Twenty-five (\$25.00) Dollars per set, which amount will not be refunded.

A check drawn on a solvent clearing-house bank or trust company, duly certified by a proper officer thereof, in the amount of Fifteen Thousand (\$15.000.00) Dollars, and made payable without reservation to the Mayor and City Council of Baltimore, must accompany the proposal, and the successful bidder will be required to give satisfactory bond for the faithful performance of the contract.

The Board of Awards reserves the right to reject any or all bids.

NATHAN L. SMITH,

Highways Engineer.

Bids close June 24, 1930.

Louisiana Highway Work

POSTPONEMENT DATE RECEIVE BIDS

Baton Rouge, La

Notice is hereby given by the Louisiana Highway Commission, Louisiana National Bank Building, Baton Rouge, Louisiana, that the date for receiving bids for construction of the project described below has been postponed from 11 A. M., May 13, 1930, to

1930, to

11 A. M., Tuesday, June 24, 1930.
PROJECT NO. 1401, CHENEYVILLEBUNKIE HIGHWAY, Rapides and Avoyelles
Parishes, Route No. 1. Length 8.1 miles.
Concrete Pavement.
HARRY B. HENDERLITE,
State Highway Engineer.
O. K. ALLEN, Chairman,
Louisiana Highway Commission.

Bids close May 20, 1930.

South Carolina Highway Work

S. C. STATE HIGHWAY DEPARTMENT

Sealed proposals will be received by the S. C. State Highway Department on 275 miles of concrete paving, Tuesday, May 20, 11 o'clock, at Columbia.

The work is distributed as follows:
Route 1, Chesterfield County—From Kershaw County line to Patrick—20 miles.
Route 2, Orangeburg County—From Orangeburg to the Dorchester County line—20 miles.

miles. Route 2, Calhoun County—From Lexing-n County line towards St. Matthews—15

ton County line towards St. Matthews—15 miles.

Route 10, Spartanburg-Laurens Counties—From Spartanburg to Ora—25 miles.

Route 14, Pickens County—From Pickens to Liberty—7 miles.

Route 20, Abbeville County—From Abbeville to Donalds—16 miles.

Route 21, Fairfield County—From Chester County line to Winnsboro—14 miles.

Route 25, Laurens County—From Princeton to Ware Shoals—8 miles.

Route 25, Greenwood County—From Kirksey to Edgefield County line—9 miles.

Route 25, Edgefield County—From Greenwood County line to Edgefield—14 miles.

Route 26, Clarendon County—From Manning south to A. C. L. R. R.—3 miles.

Route 28, Allendale County—From Allendale to Hampton County line—6 miles.

Route 28, Hampton County—From Allendale County line through Varnville—13 miles.

Route 29 Cherokee County—From Cow-

miles. County The through Variable Trom Cowpens to Thicketty—4 miles.

Route 35, Darlington County—From Darlington County to Hartsville—14 miles.

Route 38, Dillon County—From Latta to Marion County line—3 miles.

Route 40, Charleston County—From Santee River to Charleston—42 miles.

Route 43, Edgefield-McCormick Counties—From McCormick to Rt. 25—15 miles.

Route 76, Lee-Florence Counties—From Sumter County line to Timmonsville—17 miles.

miles.

Route 217, Marion County—From Pee
Dee to Sellers—7 miles.

All work will be done in accordance with
S. C. Highway Department standard specifications.

S. C. Highway Department standard specifications.

The State Highway Department will furnish cement on all projects at \$2.52 per barrel delivered at nearest railroad point, subject to the usual return sack privilege, except for the project on Route 40, Charleston County, where the contractor will furnish the cement.

Each project may be divided into more than one contract.

Specifications and proposal forms will be on file at the offices of the State Highway Engineer, State Office Building, Columbia, S. C.

BEN M. SAWYER,

BEN M. SAWYER, Chief Highway Commissioner.

Bids close May 16, 1930.

Bids close May 16, 1930.

U. S. Englneer Office, P. O. Box 667, Vicksburg, Mississippi. Sealed bids will be received at this office until 11 o'clock a. m. May 16, 1930, and then opened for constructing about 4.385,000 cubic yards of levee work on the Arkansas River in Arkansas and 10,400,000 cubic yards of levee work on Mississippi River in Mississippi, Arkansas and Louisians.

Bids close May 27, 1930.

Elevated Steel Tank and Tower

Elevated Steel Tank and Tower

High Point, N. C.

Sealed proposals will be received by the Mayor and City Council of the City of High Point, N. C., until 7.30 P. M., May 27th, at the City Hall in High Point, N. C., for Furnishing all labor, materials, equipment, etc., for and constructing complete an elevated steel tank on steel tower for the Water Works System of the City of High Point, N. C. The work shall include all manufacture, fabrication, delivery, erection, painting and testing required. The tank shall have a capacity of one million (1,000.000) gallons and the overflow line shall be one hundred sixty-five (165) feet above the top of foundations.

Also, furnishing all labor and materials for and constructing completely the reinforced concrete foundation for the above tank, including excavation, forms, concrete work, back-filling, etc.

Proposals must be marked, "PROPOSALS FOR ELEVATED STEEL TANK AND FOUNDATIONS." All bids must be made on the blank forms provided in copies of the Proposal, Contract and Specifications, enclosed in a sealed envelope and addressed to the Mayor and City Council of the City of High Point, N. C.

Each bid must be accompanied by a certi-

fied check in the amount of five (5) per cent of the amount of the bid as evidence of good faith. Bid bonds will not be accepted.

Copies of the Plans, Specifications, Form of Proposal, Contract, etc., may be obtained upon application to the Engineers.

Bids for construction work will be considered only from contractors licensed under the laws of North Carolina, who are experienced in the class of construction involved herein.

herein.

The right is reserved to reject any or all bids or to award contracts which, in the opinion of the Engineers and the Mayor and City Council, appear to be for the best interests of the city.

C. A. YORK, Mayor.

E. M. KNOX. City Manager.

WILLIAM C. OLSEN, INC.,

Consulting Engineers,

Raleigh, N. C.

Bids close May 30, 1930.

Excavation for Drainage

Excavation for Drainage

Birmingham, Ala.

Sealed proposals will be received by the undersigned until 10 o'clock A. M., Friday, May 30, 1930, for certain earth and rock excavation which is proposed to be done by the City of Birmingham on Section One of Village Creek drainage project. (From a point approximately 4800 feet west of the Western City Limits of Birmingham to Avenue F. Ensley.) The approximate principal quantities being as follows:

79.600 Cu. Yds. Earth Excavation; 36.400 Cu. Yds. Rock Excavation; 500 Sq. Yds. Rip-Rap Masonry.

Specifications may be obtained and plans examined at this office. The right is reserved to reject any or all proposals.

A. J. HAWKINS, City Engineer.

Bids close May 21, 1930.

Stationery, School Supplies

DEPARTMENT OF EDUCATION OFFICE OF THE BOARD OF SCHOOL COMMISSIONERS

Madison and Lafayette Avenue

Baltimore, April 30, 1930.

SEALED PROPOSALS, in duplicate, addressed to the Board of Awards, will be received at the office of the City Register, City Hall, Baltimore, Md., until 11 o'clock A. M. WEDNESDAY, MAY 21, 1930, endorsed as follows:

Proposals for Stationery, Art Classes, Kindergartens, Mechanical Drawing Classes and Classroom Supplies for the Department of Education.

Specifications for the above may be ob-

of Education.

Specifications for the above may be obtained at the office of the Assistant Superintendent in charge of the Business division of the Department of Education, 1230 East 20th Street, Baltimore, Md.

Each bid must be accompanied by a certified check of the bidder for \$50.00, made payable to the Mayor and City Council of Baltimore, and drawn on a clearing-house bank.

Baltimore, and drawn on a creating and bank.

The successful bidder will be required to give bond for the faithful performance of his contract, and in an amount equal to the contract price, and to comply with the City Charter respecting contracts.

The Board of Awards reserves the right to reject any or all bids.

JOSHUA R. JOLLY,

Acting Secretary Board of School Commissioners.



ASSIFIED OPPORTUNITIES



MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

FOR SALE—Factory Sites, City Property, Water Frontage, Tracts for Suburban De-velopment. Timber Lands and Colonizing Lands. H. H. Wefel, Jr., Mobile, Alabama.

PHOSPHATE ROCK PROPERTY

PHOSPHATE ROCK PROPERTY in Tennessee For Sale—1500 acres containing approximately 3,000,000 tons brown rock and 3,000,00 tons blue rock; also plant complete for mining, washing, drying and grinding rock; 4000 tons storage shed; plenty water for washing rock. N. & C. & St. Louis R. R. siding. Sold cheap. Care FRED. G. BUSHOLD, Cregg Bldg., Lawrence, Mass.

MANGANESE DEPOSIT

MANGANESE—NEAR RAILROAD AND RIVER, IN ROCKINGHAM CO., VA.: 260 ACRES HIGH-GRADE ORE. HAS YIELD-ED 6000 TONS THE ACRE. ADJACENT LAND ALSO YIELDS ORE. FOR DE-SCRIPTION AND TERMS WRITE A. L. HARNSBERGER, MT. AIRY, MD.

COAL LANDS AND MINES

50,000 ACRES COAL LANDS, \$5.00 per acre. East Tennessee. On railroad; good markets North and South, with favorable freight rates. Excellent steam, domestic, by product coals, 3 to 10 ft. seams. Producing mines on property withheld from sales. Excellent opportunity for safe, long time investment, operating or leasing. Address No. 8090, care Manufacturers Record.

TIMBER AND TIMBER LAND

TIMBER AND TIMBER LAND

23,000 acres Pine lands in South Georgia, intersected by Hard Surfaced Federal Highway and Trunk Line Railroad near large town; 18,000,000 feet Pine Timber on one-third of area; balance has quantities of fine young, rapid-growing Pine Timber. Excellent possibilities for turpentine and timber, also good tobacco land. Price only \$7.00 per acre. For particulars address P. O. Box 554, Savannah, Georgia.

Rates, Terms and Conditions

RATES: 30 cents a line each biser-tion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to a line. When the adver-tisement contains a number of long words proper allowance should be

Rates for Special Contract: 100 lines 28c a line 300 lines 26c a line 500 lines or more 25c a line

ERMS: For transient advertising cash with order; check, postoffice or express money order or stamps accepted. TERMS:

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES

TIMBER AND TIMBER LAND

FOR SALE—TIMBER LAND: to close an estate. Over 5000 acres, mostly virgin timber, approx. 25 million ft.; poplar and oak predominating. Bledsoe Co., Tenn.; priced to sell. If interested, write S. WARD SAWVEL, 635 S. Hill St., Los Angeles, Cal.

FARM AND TIMBER LAND
FOR SALE—1995 acres Newberry County,
S. C.; 375 acres open, including 150 acres
fine bottoms. balance covered with small
pines; over 500 thousand feet pine timber
ready to saw; 8 houses and 4 barns. On 2
highways; 4 miles from R. R. Bargain, \$5
per acre. W. R. Reid, Jr., Newberry, S. C.

FARM, FRUIT AND TRUCK LANDS

FLORIDA

FOR SALE—80 acres 3 miles of Piney Point, 15-acre grove, 10 acres in farm, good house and barns. Only \$12,000. MOYSE HOLMES, Broker, 441 Main Street, Bradenton, Fla.

WE HAVE exclusive sales privilege for more than 500,000 acres of Florida land at sacrifice prices. Also large areas in Georgia and South Carolina. Desirable second growth pine lands; agricultural lands adapted to tung oil and citrus crops, grazing lands, etc. To share in the assured future of Florida and the South INVESTIGATE NOW. THE JAMES D. LACEY COMPANY, 1409 Barnett Bldg., Jacksonville, Fla.

BEAUTIFUL 60-acre water front estate for sale, or will sell stock in syndicate; 50 acres in bearing orange and grapefruit. Fruit will pay for property in from 5 to 8

Fruit will pay for property in the years.

Beautiful \$30,000.00 residence on property with 1300 feet on water front, 800 feet seawall. This property has its value from the standpoint of a citrus grove, or as an investment for a beautiful water-front development in the near future, as it is in the city limits of Fort Myers. Price \$75,000.00. The P. John Hart Realty & Investment Corporation,

No. 6 Postoffice Arcade,

Fort Myers, Florida.

LOUISIANA

ST. CHARLES PARISH, LOUISIANA, offers opportunities in cattle ranches, agricultural and industrial sites. St. Charles Bank & Trust Co., Sellers, La.

VIRGINIA

RIVER FARM FOR SALE OR EX-CHANGE—750 acres, brick manslon, two stock barns, several tenant houses, 125 acres rich bottom land, 325 acres fine up-land, 300 acres timber. Good neighborhood. Low price. Low price. GEO. V. VENABLE & CO., Lynchburg, Va.

SOUTHERN HOMES

OVER 500 ACRES, spring, brook, log cabin, many long leaf pines. Estate pre-serve. Fine fish pond "full of fish." Low acreage price. G. F. ARCHER, Alken, S. C.

SOUTHERN
HOMES
in the best city in the Carolinas.
\$10,000 to \$75,000, according to
size and location.
F. C. ABBOTT & CO.,
Charlotte, N. C.
32 years in Charlotte Real Estate.

BUSINESS OPPORTUNITIES

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill proper-ties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

FOR SALE—A going coal yard, centrally located, in Norfolk, Virginia. Good chances for right kind of manager. Address No. 8077, care Manufacturers Record, Baltimore.

FOR SALE — To right party profitable hamper and veneer mill. Located in Flor-ida. Plenty of timber available. Address No. 8081, care Manufacturers Record.

INVESTIGATE OPPORTUNITY offered to parties willing and able to lend or guarantee \$1000 up each, toward a manu-facturing enterprise. For particulars ad-dress No. 8086 care Manufacturers Record.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doutbless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

FOR SALE OR RECAPITALIZATION-FOR SALE OR RECAPITALIZATION—Veneer plant for face veneers; going concern; 120" Merritt lathe, 66" Capital lathe, Capital Veneer saw, Protor & Schwartz dryer; situated in the midst of fine body of white oak and walnut. On B. & O. R. R. in West Virginia, Correspondence solicited. No. 8084, care of Manufacturers Record.

WANTED—Some company to manufacture "patent applied for" glare eliminating goggle, for night drivers, on contract or royalty. Possible to manufacture very cheaply. Would go big in five and ten cent store. Positively practical and highly recommended by those who have tried it. Don't answer if you don't mean business.

C. C. WRIGHT, Bunn, N. C.

RECREATIONAL PROPERTY

274 ACRES Recreational Land for Sale. Situated 7½ miles from St. Clair, Mo., on the Meramec River; good house, also two good springs. Price \$30 per acre and will take in as part payment good Soda Fountin and Restaurant equipment.

J. L. OWENS, Owner,
St. Clair, Mo.

BUSINESS AND INVESTMENT PROPERTIES

SOUTH CAROLINA HOTEL, pleasure park, hunting preserve and farm; 1500 acres, on National Highway No. 1. An ideal location for Winter and Summer patronage. New buildings, swimming pool, famous medical springs, 50-acre fishing lake, 3 miles of river. One of best business opportunities of its kind in the South; \$9000 cash and terms. No. 8096, care of Manufacturers Record.

GADSDEN, ALABAMA, offers wonderful investment possibilities to the conservative buyer of well-located real estate. Gulf States Steel Co. spending twenty million dollars, Southern plant Goodyear Tire Co.: 20 other textile, cast-iron pipe, woodworking and stove industries. Offers same opportunity Birmingham did twenty years ago. For homes, income, industrial properties or business enterprises write FISHER REALTY COMPANY, GADSDEN, ALABAMA.

FINANCIAL

MONEY WANTED
6, 7 and 8% Mortgage Loans on City.
Town or Country property. Southern Land
& Investment Co., Raton Rouge, Louisiana.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,
Woolworth Building New York City

DEVELOPING AND ENGINEERING

ORGANIZING—DEVELOPING— ENGINEERING

ENGINEERING

Engineering firm, widely experienced in investigating, organizing, developing, designing and supervising construction, solicit correspondence regarding development or extension of meritorious projects and existing industries, power plants and utilities. Address No. 8016, care Manufacturers Record.

INDUSTRIAL PLANTS

FOR SALE—Manufacturing Plant of going concern. Need money for operating purposes. Will sign ten years' guaranteed lease at attractive rental. For full particulars address No. 8092, care of Manufacturers Record, Baltimore, Md.

COMPLETE WOODWORKING PLANT, suitable for furniture or other wood articles. Dry kiln, side track, with ample trained labor available. Can be bought for less than one-half reproduction value. First Securities Company, Chattanooga, Tenn.

FOR SALE OR RENT—Flour, Meal and feed Mill. Flour mill 100 barrel capacity; generates own electric power, driven by 100 hydro horsepower; all equipment in excellent condition. Good wheat country. Entire production can be sold locally. Two railroads; hard surface pikes in all directions. The only mill in the city. Address SAM T. MILLARD, Vice-Prest., First National Bank, Elizabethton, Tenn.

WAREHOUSE FACILITIES

7500 SQUARE FEET bonded warehouse space in Jacksonville, Florida, on Seaboard siding, at very reasonable rental. For par-ticulars address E. W. GROUT, 1052 East Bay Street, Jacksonville, Fla.

STORAGE SPACE IN NEW YORK
We have office facilities and unoccupied
warehouse space and would like to handle a
small commodity as a side line, or could use
our warehouse space as a depot where material could be stored and shipped by us as
orders were received. If desired, could also
take care of billing. For further particulars
address take care of billing.
address
GALER EQUIPMENT CORP.,
459 Theriot Ave., Bronx, New York City.

FACTORY BUILDINGS

FACTORY, 50,000 sq. ft., in N. C. Piedmont. Suitable for textiles or varied lines. White labor plentiful. Water and steam power installed, electric available. Sprinkler system. Offered at sacrifice to settle estate. No. 8095, care of Manufacturers Record.

FACTORY SITES

FACTORY SITE

ON DEEP WATER

If you are seeking an ideal deep water industrial location in Baltimore, Maryland, on one of the finest harbors in the world, see full page advertisement on page 105 April 10th issue of the Manufacturers Record.

W. S. CAHILL CO.,
Key Highway and Webster Street,
Baltimore, Md.

PATENT ATTORNEYS

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS, TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

EDWARD C. SASNETT, Atty. at Law, formerly a Principal Examiner in the U. S. Patent Office. I offer to inventors and manufacturers a strictly personal service based on twenty years' experience in patent work. McGill Building, Washington, D. C.

PATENT ATTORNEYS

FREE "PATENT PARTICULARS" Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 F. Washington, D. C.

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

PATENTS...TRADEMARKS...COPYRIGHTS Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

REPRESENTATIVES WANTED

WANTED—Reliable spare time workers, commission basis, for very remunerative introductory assistance in making local machine sales, etc. PAULY MFG. CO., 1333 K Northwest, Washington, D. C.

WANTED—Representative acquainted with Architects and Contractors—especially Plastering Contractors—part time, on commission basis, to keep us informed of jobs coming up in your city requiring plaster ornament. Have attractive proposition. Write for particulars. LOUISVILLE COMPOSITION PRODUCTS CO., Louisville, Ky.

SALESMAN to sell boiler compound. Must have his own car and understand steam boiler operations. In replying, please state present connection, if any experience, etc. Straight commission basis our method of payment.
SOUTHERN PRODUCTS CORPORATION,
520 Elysian Fields Ave.,
New Orleans, La.

AGENCIES WANTED

WE DESIRE the agency for a good product in this territory. Small repeat article preferred. Good references. MANAGER, 329 Tulsa Trust Bullding, Tulsa, Okla.

CIVIL ENGINEER

GRADUATE C. E., also Liberal Arts education, with 10 years' general const., land development and engineering experience, wishes supervising or executive position. In present position has supervised over \$700,000.00 worth of bldg. construction for anationally known organization. Address No. 8097, care of Manufacturers Record.

SITUATIONS WANTED

COST MAN, 32, now employed in North Alabama, desires a change for reasons that will satisfy anyone; 8 years' plant account-ing experience. Will go anywhere in Dixie. Good references. Salary desired \$225. Ad-dress No. 8093, care Manufacturers Record.

EXECUTIVE ENGINEER (manager), 44, thorough technical and business education and training. Twenty years' general engineering experience in consulting, designing, operation, construction, supervision and sales. Field has been largely in milling and allied industries, including flour, feed, dry chemicals, bakery and material handling equipment. Well versed in modern methods of factory management and industrial engineering. At present employed as district manager of sales and plant operation. Address No. 8094, care of Manufacturers Record.

MEN WANTED

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

R. W. BIXBY, INC.,

DIXIE BAUXITE COMPANY

SWEET HOME, ARKANSAS

BAUXITE ORE

For All Requirements

Crude, Dryed, and Calcined Bauxite

Abrasive Ore dryed or calcined, Chemical Ore dryed, Water Purification Ore dryed. Very attractive price on extra High Grade Crude Ore.

Just acquired additional large acreage bauxite bearing lands. Five years in the Bauxite Producing business. In it to stay. Pioneers in deep mining for bauxite and at the present time the only Company in the world using vertical shaft and the caving system.

HOME REFERENCE:

Union Trust Company, Little Rock, Ark.

We sell strictly on guaranteed specifications. Quality, quantity, and prompt shipments guaranteed.

King Lumber Company Plant and Warehouses

CHARLOTTESVILLE, VIRGINIA

For Sale at Public Auction on the premises at 10 A. M. o'clock May 12th, 1930. For further information communicate with the undersigned.

A. P. Walker, Trustee

Factory and Warehouse Sites

AT

ATLANTA For Sale or Lease

For Manufacturing or Warehouse Purposes Only

Central of Georgia Railway

Extending from East Point to Inman, Georgia

Atlanta Rates
Good Labor Supply

Electric Power
Water Supply
Electric Lights

Regular Switching Service Street Car Service Suburban Trains Paved Roads

Sewerage

Write for Copy of

"The Natural Advantages of the Atlanta Industrial District"

R. R. OTIS, Agent

ATLANTA

GEORGIA

YOU may replace certain machinery in your plant this year. Let us help you sell the equipment you will no longer need by advertising it in

THE RESALE DEPARTMENT

Manufacturers Record

Baltimore, Md.



RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



WANTED

To buy steel building forty to sixty feet wide, two hundred fifty to three hundred feet long, with runway for electric crane of about twenty ton capacity. Quote best price and furnish description.

SOUTHERN QUARRYING COMPANY Elberton, Ga.

REVOLVATORS

For Sale

New and rebuilt portable elevators (stackers), hand or electric power, any size and capacity.

Address P. O. Box 1844 Atlanta, Ga.

PORTABLE HULL of a 10 inch hydraulic dredge FOR SALE

Consists of two steel pontoons; each 49 x 10 x 4. Gantries: A Frame: Deck House; Practically New. Suitable for scow purposes. Located at Detroit.

Address A-497
Care of Manufacturers Record, Baltimore, Mo

BOILERS

2-300 H.P. Heine Water Tube-A.S.M.E., 160 lbs.
1-80 H.P. Erie City Economic Type-A.S.M.E., 125-lbs.

125-lbs. Stacks from 30" to 50" diameter Get Our Prices

M. J. HUNT'S SONS 1620 N. Delaware Ave., Phila., Pa.

"Rockford Rebuilt" Synchronous Motors

3 Phase-60 Cycle

50 HP.* 440 V. 1200 RPM Ridgway. 125 HP. 440 V. 1800 RPM Gen. Elec. TS new. 125 HP. 240 V. 900 RPM Gen. Elec. 125 HP. 240 V. 720 RPM Gen. Elec. 125 HP. 2300 V. 720 RPM Gen. Elec. 125 HP. 2400 V. 600 RPM Gen. Elec. 250 HP. 2300 V. 514 RPM Gen. Elec. 300 HP. 440 V. 600 RPM Gen. Elec. 500 HP. 440 V. 600 RPM Gen. Elec.

"Direct connected exciter.

Just a few of many "Rockford Rebuilt" units available for immediate shipment. Send for complete stock list. Bulletin No. 37.

Rockford Power Machinery Co. "Everything in Motore" 620-626 Sixth St., Rockford, Ill.



RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES



FOR SALE

COKAL STOKER

6-ft. 9-in. x 11-ft. Grate mechanically operated. In good condition. Only two years old and used but very little. Putting in larger stoker.

BEST MALT PRODUCTS CO.

1301-29 Fletcher St., Chicago, Illinois

TANK CAR TANKS

150-10,000 Gal. 150-12,000 Gal. Many others of various capacities. Cleaned, Tested, painted, Guaranteed

ZELNICKER IN ST. LOUIS

Rails, Equipment, Machinery, Steel Piling, Oil Engines, Tanks, etc. Send for 60 page Bulletin of Bargains.

FOR SALE

--McEwen H.R.T. Boller, 200 horse power, 100 lbs, pressure; never used; price \$350.00 f.o.b. cars Bristol, Va.; also two 100 horse power Erie City bollers at \$250.00 each f.o.b. Bristol, Va., can be inspected our yard at foot of Mary St.

For details write

Nashville Industrial Corp. Old Hickory, Tennessee

3 PH. 60 CY. MOTORS

-200 HP, 450 RPM, 440 V., G, E, -150 HP, 1200 RPM, 220/440 V., G, E, -100 HP, 900 RPM, 220/440 V., G, E, -100 HP, 1160 RPM, 220 V. Allis, -75 HP, 720 RPM, 220, 440 V., G, E,

Many others. Write for list

V. M. NUSSBAUM & CO. FORT WAYNE, IND.

FOR SALE

Greenless horizontal gang borer No. 370 with 8 spindles; No. 79 McKnight wood post single borer; Zimmerman 2½ gal. glue converter; 1 h. p. motor; 5 h.p. motor; 30"x8' Fay & Scott turning lathe; drill press; steam retort 16x16x120; Worthington hot water pump; Gardner-Rix No. 10 air compressor 4½x4½; spray guns; spray booths and other finishing machinery and equipment.

We also have complete machinery for manufacturing fibre and upholstered furniture. Write for particulars if interested. All reasonable offers will be accepted.

CAPITAL CITY CHAIR CO. ATLANTA, GA.

It pays to buy Gregory



Hi-Grade-Rebuilt Motors

For over 36 years well-informed buyers have profited by that fact.

Gregory Hi-Grade-Rebuilt Motors do everything that a new motor can do: last as long; look as good; and better still—cost much less.

Why buy new motors? Try Gregory Hi-Grade-Rebuilt and Save Money. They are shipped on approval.

Send for our 80-page Illustrated Monthly Bargain Sheet.



Gregory Electric Company

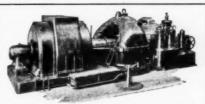
Lincoln and 16th Street-Chicago

Your ADVERTISEMENT

in these pages places your facilities before the leaders in manufacturing and industrial operations in the South and Southwest, creating wider markets for your products.

> Advertising rates gladly submitted upon request

MANUFACTURERS RECORD Baltimore, Maryland



10,000 KVA Turbo typical of 4 units recently delivered and similar to the following.

5.000 KW CW-218 Frame—11, 1,000 KV CW-218 Frame—11, 2,000 KVA CW-118 Frame—11, 7,500 KW CW-78 Frame—31, 1,000 KVA CW-76 Frame—31, 1,700 KVA CW-76 Frame—31, 1,700 KVA CW-76 Frame—31, 1,700 KVA CW-76 Frame—31, 1,500 KVA CW-16 Fr

A.S.M.E. CODE DESIGN BOILERS 200-225 lbs.

-1500 H.P. Cross Drum B & W -2650 HP Ladd Bent Tube - 627 HP Stirling Plant, modern stokers,

auxiliaries 8- 504 HP B & W Vertical Steel headers, et al.

CONDENSERS MOTOR GENERATOR SETS

Verification and proof of new equivalent condi-tion easily reached on personal inspection 50% to 200% saving on investment Send us list of your requirements—or what you have for sale

Paul Stewart and Company Power Specialists

First National Bank Bldg., Cincinnati, Ohio.

OFFERS BIG BARGAINS IN

ed and Rebuilt Engine Generator Sets, Turbo nerator Sets, Motors, Botary Converters, Gene-ors, Motor Generator Sets, Engines, Boller-am and Electric Machinery of all kinds, also chine Tools, Send for our new machinery list, urs for the asking. Established 50 years

Me RANDLE MACHINERY CO

1734 Powers St., Cincinnati, Ohio

MOTOR BARGAINS



Above are a few items picked from our New York stock. It will pay you to send us your inquiries before ordering.

Motors—Generators—Transformers and other Electrical Equipment

Belyea Co., Inc., 155 W. 18th St.

REBUILT-GUARANTEED

Selected Items from Our Stock Priced to Meet the Market

No. 7½ Sash & Dado Mch., "American"
Sash & Door Clamp, "H. B. Smith."
Single head Sash Sticker, with borer & groover, No. 1 "American"
Single head Sash Sticker, 6", "Hall & Brown," with groover and bore.
4" 4 side Hor. Moulder, No. 1 "American."
4" 4 side Hor. Moulder, No. 3 "Yates;" hopper feed.
8" 4 side Hor. Moulder, No. 3 "American."
8" 4 side Hor. Moulder, C4 "Yates."
10" 4 side Hor. Moulder, No. 2 "American."
11" 4 side Hor. Moulder, No. 22 "American."
15" x 6" A4 "Yates" Planer and Matcher.
30" x 16" Timber Sizer, No. 8 "S. A. Woods."
42" 3 drum Endless Bed Sander, No. 431 "Berlin."
36" Band Saw, "L. Power & Co."
38" Band Saw, "Oliver."
44" Band Resaw, No. 283 "Yates."

L. F. SEYFERT'S SONS, INC.

437 N. 3d Street

Philadelphia, Pa.

Machinery Merchants Since 1878.

CRUSHING ROLLS 36" x 16"

Also a full list of drying, grinding, pulverizing and other mining ma-chinery. Send us your inquiries.

HEINEKEN ENGINEERING CORPORATION

31 Nassau St. · New York

Tel. Hitchcock 4378-9

DELTA EQUIPMENT CO.

Care of Manufacturers Record, Baltimore, Md.

CAST IRON PIPE

Approximately 10,000 feet 10" class B cast fron, bell and spigot water main in 12 ft. lengths. Good as new. Priced very low for immediate shipment. Located Clinchfield, Va.

Nashville Industrial Corp. Old Hickory, Tennessee

NEW AIR TOOLS AT 60%

(cap'y, up to 2")

18 size C "Thor" air motor metal drills
20 size 42 "Thor" air motor metal drills
9 size — "Thor" air motor metal drills
11 size BW "Thor" air motor metal drills
(Cap'y, up to 9/16")
11 size BW "Thor" air motor metal drills
(Cap'y, up to 2")
15 size 8 "Thor" air motor close corner
metal drills.
14 4X "Little Giant" air motor metal drills
12 2X "Little Giant" air motor metal drills
15 No 60 "Killer Master" riveting hammers,
also several other makes and sizes.
These are absolutely brand new tools on

These are absolutely brand new tools on which we will save you 40%.

W. M. SMITH & COMPANY Box 1709

SATISFACTION

ALBERT PIPE SUPPLY CO., INC

NEW-RECLAIMED-USED

ALL SIZES CUT TO SKETCH AND STOCKED

BERRY & NORTH 13th STS.

BROOKLYN, N.Y.

GUARANTEED

D

Birmingham, Ala.

PIPE

Rethreaded, reconditioned, guaranteed, suitable for all practical purposes, furnished with new threads and couplings, 400,000 feet in all sizes from 24" to 34".

Also large stock of spiral pipe, sizes 7", 10", 12", 14", 20" and 24". Large stock of valves and fittings, screwed and flanged. Can make attractive prices.

MARINE METAL & SUPPLY CO. 167 South St., NewYorkCity

PELSPUNCH & SHEAR

No. 16 Triple Combined Punch, Slitting Shear, Bar, Angle and Tee Cutter. Shear Plates, %", Punch 1" thru. %".

148 N. 3d St. Philadelphia, Pa

STEAM DRYER BARGAINS

10—Bartlett & Snow Steam Jacketed
Agitated Reducing Kettles or
Steam Dryers, 10' dia. x 3' deep.
In excellent condition.
Address A-471

SERVICE

Greenpoint Iron & Pipe Co., Inc. 187-197 Maspeth Ave.

NEW

SECOND HAND

Overhauled and Tested New Threads and Couplings

Albert & Davidson Pipe Corp.

Second Ave., 50th-51st St., Brooklyn, N. Y. Telephone Sunset 1900

Also Cut to Sketch

PRICES

Brooklyn, N. Y.

IRON AND STEEL PIPE

Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

BOILERS

2-500 H. P. Heine Water Tube, 160 lbs. Pressure, A. S. M. E. code. 2-180 H. P. Keeler water tube, 200 lb. Pressure, A. S. M. E. code. 1-150 H. P. 72" x 10" Hor. Ret. Tubular, 150 lb. pressure, A. S. M. E. code.

GENERATOR SETS

2— 50 KVA 220 volt. 3 phase, 60 cycle Ridgway Generators, direct connected to Ridgway Engines.

METAL WORKING TOOLS

I—8' Geo. Ohl bending brake, press type, 10 gauge capacity.

1—8' Cevington power squaring shear, 14" gap, ¼" capacity.

1—No. 6B Nazel hammer, motor drive, capacity 7" square.

1—2000-lb. Chambersburg double frame steam forging hammer.

1—100-lb. Niles Bement Pond single frame steam forging hammer.

1—No. 6 Warner & Swassy turret lathe, belt drive, quantity of equipment.

No. 4—36" Hilles & Jones single end punch, belt drive, capacity 1¾" x 1"

No. 3—24" Southwark single end punch, motor drive, capacity ¾" x ¾".

115 North Third Street

THE O'BRIEN MACHINERY CO.

Philadelphia, Pa.

Reach the Buyers

of used machinery and equipment through the

Resale Department

An advertisement in this department will help sell machinery being replaced or no longer needed in your plant.

Rates on Request

MANUFACTURERS RECORD Baltimore, Md.



America's Used Transformer Clearing House Cincianati Ohio

We Carry a stock of approximately 5000 transformers of a total capacity of about 100,000 kva., in sizes from 1 to 1000 kva. and from 110 volts to \$6,000 volts.

We specialize in the rewinding and repair of transformers, any size and any specifications. All work positively the best and guaranteed as such. We will show you a saving of from 30% to 60% of the cost of new transformers!

Send for our monthly bulletin, showing complete lists of transformers on hand, and our prices for rewinding transformers.

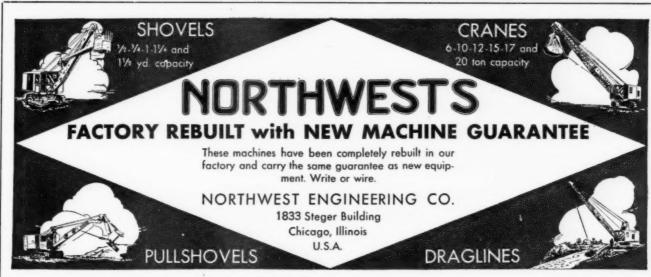
WE BUY MODERN TYPE TRANSFORMERS—ANY SIZE—ANY QUANTITY

3



RAILROAD AND CONTRACTORS' **EQUIPMENT**





SHOVELS

- 1—BUCYRUS ERIE B-2 DREADNAUGHT, Steam Crawler, new 1929, 1½-yard, Chain Drive Crawlers; like new.
- -ERIE B-2 DREADNAUGHT Steam Crawlers; new 1927, 1928, 1929, 1-yd. High Lift, excellent condition.
- 2—MARION Type 7, Steam Crawlers, new 1929 and 1928, 1-yd., like new.
- 2-MARION 32, Steam Crawlers, new Nov. 1929, 1½-yd., 21' Boom, like new.

 1-OSGOOD HEAVY DUTY, GASOLINE Crawler, new 1928, 1½-yd., High Ldft, 45 ft. Crane and Dragline attachment.
- -OSGOOD GASOLINE Crawler, new 1927, practically new 1-yd. shovel equip., also 40 ft. crane boom.

CRANES

- CRANLES

 -40-ton cap. LINK-BELT K-55, GASOLINE Crawler, new 1929.

 -12-ton cap. NORTHWEST No. 105, GASOLINE Crawler, new late 1928, 40 ft. boom.

 -12-ton cap. OSGOOD, GASOLINE Crawler, new 1927, 40 ft. boom, first-class.

 -10-ton cap. KOEHRING, GASOLINE Crawlers, new 1927, 40 ft. boom, excellent condition.

GREY STEEL PRODUCTS COMPANY 111 Broadway New York, N.Y.

IMMEDIATE SHIPMENT

4000 tons of 85 lb. ASCE Open Hearth rail with angle bars. Attractive prices quoted. Wire or write for prices.

M. K. FRANK

RENTAL

15 Park Row New York City

Clark Building Pittsburgh, Pa.

Contractors

Equipment Can Be Had Bv

Writing, Phoning or Wiring

J. R. CHRISTIAN CO.

Post Dispatch Bldg. HOUSTON

STEEL

SHEET PILING

Rented, Sold and Bought.

WEMLINGER, INC.

149 Broadway New York

FOR SALE OR RENT

Keystone Graders, Model No. 4.

10 ton Monarch 3 wheel Steam Roller.

5 ton Buffalo Tandem Steam Roller.

10 ton Buffalo Springfield Steam Rollers.

Large stock Rock Crushers, Screens & Elevators.

JOHNSON & HOEHLER
Fernwood, Del. Co. Pennsylvania

RELAYING RAILS — SWITCHES TRACK MATERIAL

THE PERRY BUXTON DOANE CO. Pennsylvania Bldg. Philadelphia, Pa.

Someone Can Use that MACHINERY

YOU HAVE IN STORAGE

Increase your bank deposit and help out the other fellow. Used machinery advertised in the

RESALE DEPARTMENT

will tell our readers about it.

Manufacturers Record Baltimore, Md.

EXCAVATOR



BARGAINS

Lease any of the following machines with option to purchase.

Marion No. 32 I Yard Steam Shovel enfull crawlers. Ready for immediate delivery. An exceptional bargain, located at Pittsburgh. P&H Model 204, % yard Clamshell. 35 feet boom. Has been very carefully reconditioned. At Hoboken yard.

Thew I yard Steam Shovel, on wheels with 20 feet beem. Must move quick, no reasonable offer refused. At New York.

P&H Model 400 Dragline, ¾ yard, in good shape, ready to go. Located at Momphis.

P&H Model 206 % yard Shovel. Thoroughly overhauled and in very good operating condition. At Heboken yard.

Erie Gas-Air Clamshell Crane with I-yd. bucket. Looks and operates like new. At Chicago yard.

Liberal Terms

Wire or write us at our expense, if you do not see what you want.

EXCAVATING EQUIPMENT DEALERS, INC.

Exclusively Excavating Equipment

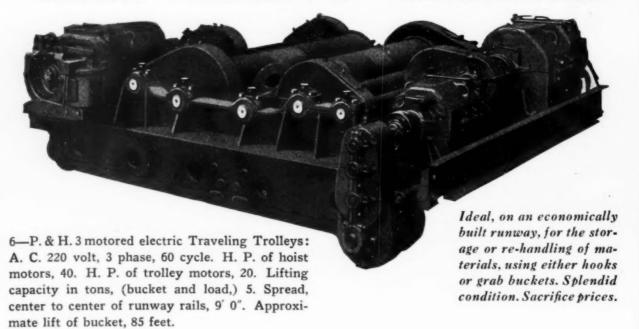
Hobeken, N. J. Berkejey. Cal. 1706 Willew Ave. 2657 Ninth St.

West Allis, Wis. 5905 Greenfield Ave.

Les Angeles 2248 E. 37th St.

Chicage, III. 1040 W. Division St.

TRAVELING CRANES



Fredk. L. Cranford-Chas. H. Locher, Inc. 1475 Broadway Tel. Bryant 1705 New York City

RAILROAD and CONTRACTORS EQUIPMENT

- 40 Standard and 38" Gauge Modern Direct-connected Locomotive, in all types and weights from 8 to 75 tons.

 10 Standard and 38" Gauge Geared Locomotives, all weights.

 15 Steam Shovels and Locomotive Cranes of different types and sizes.

 100 Sets 35 and 40-lb. Frogs and Switches; good as new.
 - Tie plates, track spikes and track bolts, immediate shipment from Birmingham stock.

Your inquiries will receive eareful and prompt attention

BIRMINGHAM RAIL & LOCOMOTIVE CO., Birmingham, Ala.

RELAYING RAIL les 30-lb. 20 Miles 70-lb. les 40-lb. 5 Miles 75-lb.

- 5 Miles 30-lb.
- 10 Miles 40-lb.
- 5 Miles 50-lb.
- 10 Miles 80-lb.
- 10 Miles 60-lb.
- 3 Miles 90-lb.

Also other sections for southern delivery

WELLER & COMPANY NEW AND RELAYING RAIL

BIRMINGHAM ALABAMA

AT EDGEFIELD, S. C. for immediate delivery

100-Western 36" gauge, 4 yard Dump Cars.

- 11-Vulcan 36" gauge, 11 x 16 Saddle Tank Locomotives with Code Boilers.
- 1—American 52 Ton, standard gauge, 6 Driver Saddle Tank Locomotive with A. S. M. E. Boller.
 1—Marion 37 Steam Shovel A. S. M. E. Boller 1¾ yd. dipper, also 60° dragline boom and attachments.
- 1-14-B % yard Bucyrus Caterpillar Steam Shovel.

All the above have been rebuilt and are like new in condition.

MOTT & MCELRATH ENGINEERING CORPORATION 249 W. 18th Street, New York, N. Y.

BEARCATS, PAVERS, ROLLERS HOISTS

Attractive bargains in used equipment for the road and building contractor.

- 2—27E Koehring Pavers. 1—21E Ransome Paver. 1—Case 10 Ton Roller.

H. O. Penn Machinery Co., Inc. 140th St. and East River, New York City

Contractors' Equipment

- -59 "B" Bucyrus, High Lift, Good Condition,
 New Cast Steel Underframe, Caterpillar
 Mounted.
 -32" Marion, 1½ Yd. Guaranteed Rebuilt
 Condition.
 -32" Marion, 1½ Yd. Good Condition.
 -35" Talen, 1½ Yd. Good Condition.
 -34" There, 1½ Yd. Good Condition.
 -34" The Yd. Good Condition.
 -34" Compressor, Sullivan, 110" Portable.
 -4ir Compressor, Sullivan, 110" Portable.
 -4ir Compressor, Sullivan, 230" Portable.
 -31" Parsons Ditcher, Good Candition.
- DEMPSTER EQUIPMENT COMPANY KNOXVILLE, TENN. . . . TEL. 2-4189

RENT — LEASE — SELL ELS — CRANES — LOCOMOTIVES — CARS — AIR COMPRESSORS

IDLE **MACHINERY**

Can be Disposed of Advertising it in the

Manufacturers Record Baltimore, Md.

Hydraulic Dredges Dipper Dredges Sectional Steel Hulls and Barges

American Steel Dredge Co.

Fort Wayne, Indiana



BOTTOM DUMPING

TURN-OVER BUCKETS

Write us for information on Contractors Buckets

G. L. Stuebner Iron Works, Inc. Manufacturers of Material Handling Equipment So. Hancock St. Long Island City, N. Y.



"Dig for all the World" THE HAYWARD COMPANY 50~52 Church St., New York, N.Y.

ELLICOTT MACHINE CORPORATION

Hydraulic Dredges—Sand and Gravel Dredges Pumps for Sand, Gravel, Dredging Hydraulic Dredging Machinery Heavy Machinery

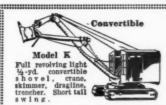
1111 Bush Street

BALTIMORE, MD., U. S. A.



KNOWN RELIABILITY!

Sucyrus-Erie equipment is known the world over, for dependable, low-cos



POWER SHOVELS

Cranes, Trenchers **SKIMMERS**

Full or part circle BAY CITY SHOVELS,Inc. Bay City, Mich.

ASPHALT PLANTS

You Can't go wrong in a Day

YOU HAVE A CRUSHING OR GRINDING PROBLEM WRITE FOR INFORMATION ON DAY' PATENT HAMMER-MILL CRUSHERS

DAY PULVERIZER CO. KNOXVILLE TENN

Handling more material at lower costs



ASTER digging isn't all a matter of dipper capacity—getting the shovel to and from the job faster - more dips per minute - easier control that keeps the operator on his toes a full working day. All these things increase the yardage-reduce costs of material handling and leave better margins of profit.

You will want to know how this faster, lower cost operation has been built into the UNIT 512 - all operating mechanism enclosed in an oil-tight case, bearings and gears running in bath of oil, clutches that operate with a finger's pull, the simplification, long life, standardization, interchangeability, ball bearing and roller bearing mounting of chrome nickel steel, heat treated shafts and gears. Versatile too -quickly interchangeable as shovel, trenchoe, crane, clamshell, dragline or backfiller. Complete information is yours on request.

UNIVERSAL **POWER SHOVEL** COMPANY



Bankers Building Milwaukee, Wis.



World's Most Economical Long Range Excavator

You find Sauerman Drag Scrapers on a wide variety of excavating and material-handling jobs and in every case the owners will tell you these scrapers are their most dependable profitearning equipment.

Sauerman Scrapers are making low cost records in levee work along the Mississippi River, also in digging reservoirs and constructing earth dams in Southern states.

They are producing the gravel and doing the cut-and-fill work on important highway projects from Maine to Florida.

They are taking the place of crews of men and teams in local gravel pits and on landgrading work all over the country.

On hundreds of other jobs—both large and small—where earth has to be moved distances of 200 to 1000 ft., these economical, one-man excavators are found at work.

excavators are found at work.

If you are not using this money-making excavating method, now is the time to get posted on the many ways in which Sauerman Scrapers can reduce your equipment and labor costs on this season's work. Send us your name and address—a postal card will do—and we will mail you our 96-page drag scraper book. You will find it one of the most interesting books on excavating practice that you have ever read.

SAUERMAN BROS., INC.

468 South Clinton Street ... Chicago





Manufacturers of Rails, Frogs, Switches, for Permanent and Portable Track. Complete line of Steel Posts for Fence and other purposes.

Catalog will be sent on request

SWEET'S STEEL COMPANY

WILLIAMSPORT

PENNA.



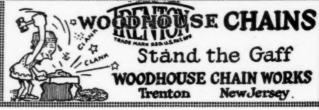


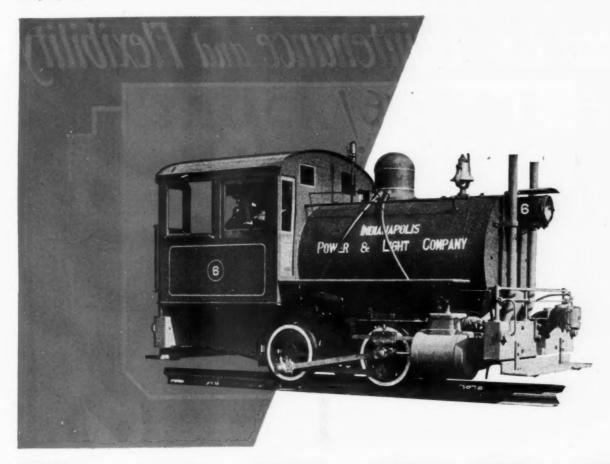


INDUSTRIAL CAR EQUIPMENT

THE ATLAS CAR & MANUFACTURING CO.
Cleveland, Ohio







P D R T E R LOCOMOTIVES

The Indianapolis Power and Light Company chose this Porter Locomotive for very obvious reasons—

- 1. They had a stationary boiler plant from which the Porter Fireless Locomotive could be charged.
- 2. They found that the savings effected by this remarkable haulage unit, over the regular steam locomotive, would pay for it within two years.
- 3. Being smokeless, this Porter Fireless Locomotive could be operated *inside* the plant as well as outside—a decided advantage over other types of haulage units.

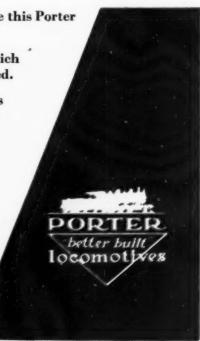
Perhaps, you too, may find the unique advantages of the remarkable Porter Fireless an asset in your plant haulage operations. Send for descriptive literature.

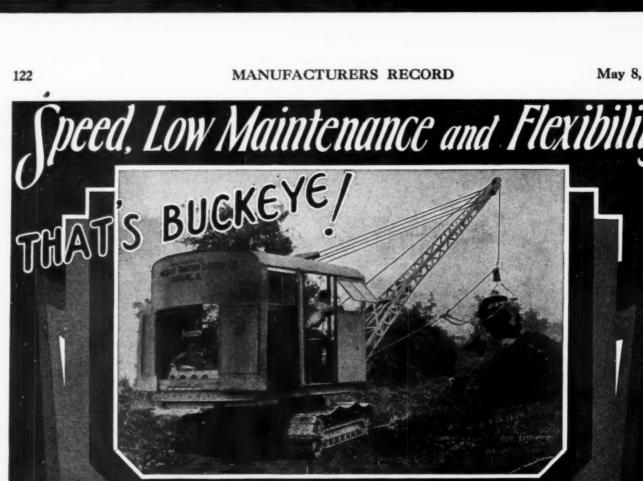
H.K. PORTER COMPANY, PITTSBURGH

Builders of Steam, Fireless Steam, Gasoline and Gasoline-Electric Locomotives

Established 1865

N.Y. Office: 44 Whitehall St. Chicago Office: Engineering Bldg., Wells St. & Wacker Dr,





Model O Utility Backfiller-Crane

Rugged construction-the real foundation of reliability and low operating cost-has always characterized Buckeyes.

For compactness, speed and mechanism, compare the Utility Backfiller-Crane, pictured above, with any equipment of its class - regardless of price. Within the range of its %-yard capacity, it is master of its field. Rapid convertibility-without drum lagging-to Clamshell, Dragline, Orange-peel, Backfiller or Crane, multiplies its earning ability.

Consider these distinguishing features-Two speeds for all operations, including traction; Twin Disc Clutch controls; machine-cut gears from solid blanks, heat-treated and hardened; upper and lower bases both one-piece electric steel castings; cable drums mounted on separate shafts; Timken roller bearings; adjustable-length boom; full-circle swing; positive traction brakes for safe grade operation; and Buckeye steel-tread Alligator Crawlers.

Write for complete specification and performance data.

THE BUCKEYE TRACTION DITCHER CO. FINDLAY, OHIO

THERE'S A BUCKEYE SALES AND SERVICE OFFICE NEAR YOU

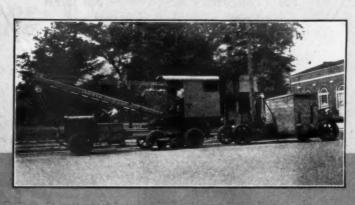
UNIVERSAL TRUCK CRANE

How Can You Get Along Without This Versatile Machine?

A ½ yard digging and material handling unit. Travels at motor truck speed on the highway. Eight fully rubber-tired wheels reduce wheel loads—strictly in keeping with modern lowered wheel load requirements.

Off the highway it travels on its own steel pavement. The Motor Truck (Christie) Crawler is put on or off as easily as a set of tire chains. And it takes the machine through mud, over uneven ground—anywhere there's a crane job to be done. (Exclusively applied to Universal Truck Cranes)

THE UNIVERSAL CRANE COMPANY LORAIN, OHIO





UNIVERSAL



Ingersoll-Rand Portables Have Many Superior Features of Design

The excellent performance of I-R Portables is due to skillful workmanship, high-quality materials, and many advanced features of compressor design.

Several of these features, including the aftercooler, the radiator guard, and the one-piece, cast-steel frame, are plainly visible. Others, built into the very heart of the machines, include the famous "constant-level" oiling system, which operates without the use of force or suction pumps; the Waukesha motor with dynamic thermostat control; and the "Airsealed" unloader, which provides a reliable and entirely automatic system of compressor regulation.

> Every moving part is accessible, so that ordinary adjustments can be made without dismantling compressor.

> > For a complete description of our latest machines and their various uses, write for illustrated Bulletin 3615.

Ingersoll-Rand

11 Broadway . . . New York

Below: Ingersoll-Rand 310-ft. portable compressor with steel wheels and solid rubber tires.





SAND

Bank

Building

oncrete

WASHED GRAVEL

In Car, Scow and Barge Lots

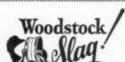
THE ARUNDEL CORPORATION

BALTIMORE, MD.

Office, PIER 2, PRATT STREET
Wharves: PIER 2, PRATT ST., and FOOT OF CLINTON ST.

SAND-GRAVEL-BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete Roads and Buildings Filter Gravel, all sizes—Building Bricks FRIEND & CO., INC. River St., Petersburg, Va.



for economy and permanence in Road Building and General Construction

WOODSTOCK SLAG CORP.

Southern Railway Bldg., Birmingham, Ala.

IN PROMOTING THE WELFARE OF YOUR EMPLOYEES AND THE CONSERVATION OF YOUR PROFITS. THEY WILL GREATLY REDUCE SLIP AND FALL ACCIDENTS IN YOUR PLANT, AND ARE EXTREMELY DURABLE. CENTRAL IRON & STEEL CO. HARRISBURG, PENNA. OFFICES IN ALL PRINCIPAL CITIES. REG. U.S. PAT. OFF. UNDERWRITERS'LABORATORIES INSPECTED S-A-443 CENTRAL Knobby Non-Skid FLOOR PLATES

DRYERS

FOR ALL MATERIALS

TOR ALL MATERIAL

AMERICAN PROCESS CO. Dodge Bidg., NEW YORK CITY

CRUSHED LIMESTONE Best for All Purposes

We manufacture all sizes of stone suitable for all classes of road building and concrete work where only a high-grade limestone is required.

Quarries opened up in 1912.

Capacity 4000 tons daily.

Quarries:

Blue Ridge, Va. Pembroke, Va. Pounding Mill, Va.

W. W. BOXLEY & COMPANY

Room 711, Boxley Building, - ROANOKE, VA.

SAND DRYERS

(With or without External Gratings)
A portable machine, daily capacity 5 to 7 tons.

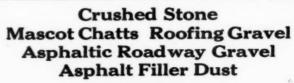


This dryer has a low first cost, is easily and cheaply operated and guaranteed dry sand.

The low cost makes it valuable for companies needing dry sand on two or more jobs at the same time, thereby eliminating the handling cost of one point only.

Write for descriptive pamphlet

The Ripley Foundry & Machine Co.
Ripley, Ohio





AMERICAN LIMESTONE COMPANY KNOXVILLE TENNESSEE





How well those responsible for the design and fabrication of

BUFFALO - SPRINGFIELD ROLLERS

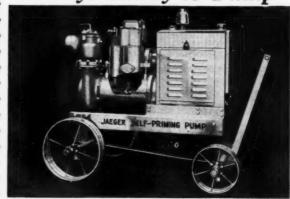
have wrought is evidenced by the fact that there are more Buffalo-Springfields on the roads and streets of America, both on maintenance and new construction, than all other builders of such equipment can account for.

Built in all practical sizes, three wheel and tandem, steam and motor driven. Scarifier and other attachments optional. Write for illustrated booklet

THE BUFFALO-SPRINGFIELD ROLLER CO.



"Always Ready to Pump"



100% SELF-PRIMING CENTRIFUGALS

No Primers...No Foot Valves

YOU'LL handle up to 3 times the work with this 100% automatic pump...and get a new idea of low pumping costs.

Self primer increases capacity; muddy water won't clog it. It's as sturdy and dependable as a pump can be. Write for 1930 catalog, prices.

SPEED BOY Centrifugal \$167.50 comblete.

THE JAEGER MACHINE Co. 115 Dublin Ave., Columbus



Go Down!

Tamping Costs There's far less time put in on hand tamping when you put down the asphalt with an ERIE Roller-

> Better clearance, easier steering, shorter turning radius allow the ERIE to get into the close places and compact the asphalt close to curbs, corners, manholes, etc.

Write today for Bulletin "M".

ERIE MACHINE SHOPS Erie, Pa.



Big Loads on Electric Trailers

A type for every service. Used by the largest mills, small mills, lumber yards, railroads, industrial plants—wherever lumber is moved.

Also made to order for special requirements. Roller bearing steel wheels, axles, lumber buggles, wagons, trucks. Ask for catalogs.

Electric Wheel Co.,

5 Ohio Street QUINCY, ILL.

THE HUBER MANUFACTURING COMPANY
310 EAST CENTER ST., MARION, OHIO. Send for Catalog YL. MOTOR

ACME ROAD MACHINERY COMPANY, FRANKFORT, NY.

ACME Tandem Rollers

ACME ROAD MACHY. CO. FRANKFORT, N.Y.

Lower **Hauling Costs Mean Bigger Profits**



HERE is sure-footed power to do your work quickly and cheaply regardless of ground or weather conditions. Write for bulletin covering your work.

Trackson Company

1316 South First St. Milwaukee, Wis.



Comes Quickly to All Wide-Awake Operators Who Meet Modern Conditions With Modern Dump-Truck Equipment



COMMERCIAL

BUMP BODIES

The COMMERCIAL SHEARING & STAMPING CO. Youngstown, O.

Classified Reference Index for Buyers

ABRASIVE MATERIALS. Carborundum Co., Niagara Falls, N. Y.

ACCOUNTANTS (Cert. and Cost.) Black & Co., Baltimere, Md. Ernst & Ernst, New York, N. Y. Le Baron, E. T., Jacksonville, Fla.

AERIAL MAPS and SURVEYS.

AIR COMPRESSORS (Stationary and Portable.)
Chicago Pneumatic Tool Co., New York.
De Laval Steam Turbine Co., Trentes, Cricago
De Laval Steam Turbins Co.,
N. J.
General Electric Co., Schenectady, N. Y.
Ingersall-Rand Co., New Yerk, N. J.
Nevo Engine Co., Lansing, Micc.
O. K. Clutch & Mchy. Co., Columbia, Pa.
Quincy Compressor Co., Quincy, Ill.
Sullivan Machinery Co., Chicago, Ill.
Westinghouse Traction Brake Co., Wilmerding, Pa.

AIR CONDITIONING SYSTEMS. Skinner Bres. Mfg. Co., St. Louis, Me. Swartwout Co., Cleveland, Ohio.

AIRPORTS. Shaw Co., Russell B., St. Louis, Mo.

ALUMINUM BRONZE POWDER.
Aluminum Co. of Amer., Pittsburgh.

AMMONIA Valves and Fttings. Vogt Meh. Co., Henry, Louisville, Ky.

ANCHORS (Floor & Wall.)

ANGLE IRON-WORKING MA-CHINERY. Whitney Metal Tool Co., Rockford, Ill.

APPRAISERS.
American Appraisal Co., Milwaukee, Wis.
Conard & Buzby, Burlington, N. J.
Main, Inc., Chas. T., Boston, Mass.

ARCHITECTS. ASCHITECTS.

Bond. Geo. Harwell, Atlanta, Ga.
Chase, Wm., J. J., Atlanta.
Lindsley, Claude H., Jackson, Miss.
Math. Inc. Chas. T., Boston, Mass.
Milburn, Heister & Ca. Wash., D. C.
Moyer Co., Tilphusan. Allentown. Ps.
Simmons, Inc. & Associates, B. Stanley,
Washington, D. C. Washington, D. C. Preacher & Cs., Inc., G. Lloyd, Atlanta. Sirrine & Cs., J. E., Greenville, S. C. Wheeler, Walter H., Minneapolis, Minn. Widmer Engineering Co., St. Louis, Mo.

——(Golf Course, Landscape.)
Draper, E. S., Charlotte, N. C.
Kirbye & Co., Raleigh, N. C.
Miller & Asso., Wendell P., Columbus, O.
Spoon & Lewis, Greensbore, N. C.

ARCHITECTS' SUPPLIES. Weber Co., Inc., F., Philadelphia, Ps.

ARCHITECTURAL Iron Work. Dietrich Brothers, Baltimore, Md. Virginia Bridge & Iren Co., Roaneke, Va.

ASH Removal Systems (Gates, Hoppers, Quenchers, etc.) Allen-Sherman-Hoff Co., Phila., Pa.

-Sluicing Systems.

Allen-Sherman-Hoff Co., Phila., Pa. —Storage Tanks (Cast Iron.)

ASPHALT. Gulf Refining Co., Pittsburgh, Pa.

Filler.

American Limestone Co., Amoxville, Tenn.

Bervicised Premoulded Products, Inc.,

Chicago, Ill.

-Paving.
Barber Asphalt Co., Philadelphia, Pa.

(Rock.)
Kentucky Rock Asphalt Ca., Leuisville,

AUDITORS. Black & Co., Baltimore, Md. Ernst & Ernst, New York, N. Y. Le Baron, Ernest T., Jacksonville, Fla.

BABBITT METAL.
Ryerson & Sons, Inc., Jos. T., St. Louis
and Now York.
(Steel.)

BACKFILLERS.
Austin Machinery Corp., Muskegon, Mich.
Buckeye Traction Ditcher Co., Findlay, O.
Harnischieger Corp., Milwaukes, Wis.
National Equipment Corp. (Insley, Parsons), Milwauke, Wis.

BALLAST (Railroad.)
American Limestone Co., Knozville, Tenn

BANKERS and BROKERS.
Provident Savings Bank & Trust Ca.,
Cincinnati, Ohis.
Taylor, Wilson & Co., Ins., Cincinnati,
Ohia.

BANKS and TRUST COMPA-NIES.
Baltimore Commercial Bank, Balta, Md.
Bank of Alabama, The, Ensley, Ala.
Bank of New York & Trust Co., N. Y.
Equitable Trust Co., New York, N. Y.
First and Merchants National Bank, Riehmond, Va.
Maryland Trust Co., Baltimore, Md.
Mercantile Trust Co., Baltimore, Md.

BARGES (Steel.)
American Bridge Co., New York, N. Y.
McClintic-Marshall Co., Pittsburgh, Pa

BARS (Steel, Rounds, Flats.

Hexagon and Squares.)
Carnegie Steel Co., Pittsburgh, Pa.
Connors Steel Co., Birmingham, Ala.
Gulf States Steel Co., Birmingham, Ala.
Knoxville Iron Co., Knoxville. Tean.
Republic Steel Corp., Youngstown, Ohlo
Ryerson & Son. Inc., Jos. T., St. Louis,
and New York.
Sweet's Steel Corp., Williamsport, Pa.
Tennessee Cosl. Iron & Railroad Co., Birmingham, Ala.
Timken Roller Bearing Co., Canton, Ohic.
Virginia Bridge & Iron Co., Roanoles, Va.
Youngstown Sheet & Tube Co., Youngstown, Ohlo.

BATTERIES (Storage.) Electric Storage Battery Co., Phila., Pa.

BAUXITE ORE (Crude, Dryed, Calcined.) Dixie Bauxite Co., Sweet Home, Ark.

BEAMS, CHANNELS, ANGLES.
Belmont Iron Works, Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Tennessee Coal, Iron & Baliroad Co., Birmingham, Ala.
Viginia Bridge & Iron Co., Roanoke, Va.

BEARINGS (Anti-friction.) Hyatt Roller Rearing Co., Newark, N. J. Timken Roller Rearing Co., Canton, Ohio.

Wood's Sons Co., T. B., Chambersburg, -(Roller.) Hyatt Roller Bearing Co., Newark, N. J. Timken Roller Bearing Co., Canton, Ohio.

BELT (Chain.)
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

(Leather, Canvas, Rubber.)

Baitimore Beiting Ca., Baltimore, Md.
Charlotte Leather Belting Ca., Charlotte,
N. C.,
Republic Rubbs Co., Youngstown, Onio.

Dressing.
Drixon Crucible Co., Jos., Jersey City,
N. J.

——Conveyors.
Barber-Greene Co., Aurora, Ill.

BENCH LEGS
Stool Co., Plainwell, Mich. — Drawers (Steel.)
Angle Steel Stool Co., Plainwell, Mich.

(Steel.)
Angle Steel Stool Co., Plainwell, Mich.

BILLETS (Basic Open Hearth.) Gulf States Steel Co., Birmingham, Ala. Republic Steel Corp., Youngstown, Ohio. Tennessee Coal, Iron & Railroad Co., Bir-mingham, Ala.

BINS (Drill and Reamer.)
Angle Steel Stool Co., Plainwell, Mich.

-(Steel Loading.)

BLASTING POWDER and Accessories.

Du Pont de Nemours & Co., E. L.,

Wilmington, Del.

Hercules Powder Co., Inc., Wilmington,

Del.

BLINDS (Venetian and Awning.)
Wilson Corp., The J. G., New York.

BLOCKS (Chain.)
Harrington Co., The, Philadelphia, Pa. —TACKLE for Wire and Manila Rope.
Patterson Co., W. W., Pittsburgh.

BLOWERS and Exhaust Fans.
National Blow Pipe & Mfg. Co., Ltd.,
New Orleans, La.

BLOW PIPE SYSTEMS.
National Blow Pipe & Mfg. Co., L4d.,
New Orleans, L4.
Skinner Bros. Mfg. Co., St. Louis, Mo.

BOILERS (New.)
Babeck & Wilcox Co., The, New Yerk.
Charleston, S. Cock & Machine Ce.,
Chatleston, S. Cock & Machine Ce.,
Chattanoga, Tenn.
Cole Mfg. Co., R. D., Newman, Ga.
Combustion Engr. Corp., New York, N. T.
Hedges Walsh Weidner Co., Chattanoga,
Tenn.
Lombard Iron Works & Supply Ce., Tenn.
Lombard Iron Works & Supply Ca.,
Augusta, Ga.
Schofield's Sons Ca., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.
Vogt Mch. Co., Henry, Louisville, Ky.

——(Used.)
Daita Equipment Co., Philadelphia, Pa.
Radle Machinery Co., The, Cincinnati, O.
Zeinicker Supply Co., W. A., St. Louis.

BOILER SETTINGS. Harbison-Walker Refractories Co., Pittsbg.

—Tubes.
Boiler Tube Co. of America, Pittsburgs.
National Tube Co., Pittsburgh, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis
and New York.

Tubes (Charcoal, Iron.)
Reading Iron Co., Reading, Pa.

BOLTS, Rivets, Studs, Washers.
Bethlehem Steel Co., Bethlehem Pa.
Progressive Mig. Co., Torrington, Conn.
Republic Steel Corp., Youngstown, Ohio.
Russell, Burdsall & Ward Boit & Nut Co..
Port Chester, N. T.
Ryerson & Son, Inc., Jos. T., St. Louis
and New York.
Virginia Bridge & Iron Co., Roanoke, Vs. ---(Track.) Sweet's Steel Co., Williamsport, Pa.

BOND BUYERS.
Garraway & Co., S. G., Chicago.
Hanchett Bond Co., Inc., The, Chicago.
Law & Co., A. M., Spartanburg, S. C.
Marx & Co., Birmingham, Ala.

Mercantile Trust Co., Baltimore, Md. Nuveen & Co., John, Chicago, Ili. Provident Savings Bank and Trust Co., Cincinnati, Ohio. Robinson-Humphrey Co., Atlanta, Ga. Seasongood & Mayer, Cincinnati, Ohio. Taylor, Wilson & Co., Inc., Cincinnati.

BOBING (Core.)
Mott Core Drilling Co., Huntington,
W. Va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Stittille, Va.
Sprague & Henwood, Inc., Scranton, Pa.

BOXES (Paper.)
Old Dominion Box Co., Lynchburg, Va.

BRASS GOODS.
Chase Brass & Copper Co., Waterbury,
Conn.
Copper and Brass Research Asso., New
York.
Mueller Co., Decatur, Ill.

—(Face.)
Alabama Clay Prod. Co., Birmingham.

——(Fire.)
Alabama Clay Prod. Co., Birmingham.
Cambria Clay Products Co., Blackfork, O.
Dee Co., Wm. E., Oak Hill, Ohio.
Taylor Sons Co., Charles, Cincinnati, Natl. Paving Brick Mfrs. Asso., Washington, D. C.

and Clayworking Machy. Steel & Sons, J. C., Statesville, N. C.

BRIDGE (Asphalt Planking.)
Servicised Premoulded Products, Ina.,
Chicago, Ill.

—Operating Machinery
Earle Gear & Machine Co., Phila., Pa. —Timber.

Amer. Creosoting Co., Louisville, Ky.
Industrial Lumber Co., Elizabeth, La.

BRIDGES (Concrete.)
Atlantic Bridge Co., Greensbere, N. C. ---(Creosoted Wood.)
Atlantic Bridge Co., Greensboro, N. C.

Atlantic Bridge Co., Greensboro, N. C.

—(Steel.)

American Bridge Co., New York, N. Y.
Atlantic Bridge Co., Greensboro, N. C.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Wilmingten, O.
Converse Bridge & Steel Co., Chatta10023, Tenn.
1ngalls Iron Works Co., Birmingham, Als.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Richmond Struc. Steel Co., Richmond, Va.
Virginia Bridge & Iron Co., Boanoke, Va.

BKONZE (Architectural.) Heath Company, J. S., Waukegan, Ill.

——(Machine.)
Moccasin Brushing Co., Chattanooga, Tenn.

BUBBLERS.
Rundle-Spence Mfg. Co., Milwaukee, Wis.
Taylor Co., Halsey W., Warren, Ohio.

BUCKETS (Clam Shell.)
Blaw-Knox Co., Pittsburgh, Pa.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Owen Bucket Co., The, Cleveland, Ohio.

---(Dredging, Excavating, Sew-— (Dredging, Excavating, Sew-er, etc.)

Hayward Co., The, New York, N. Y.

Monighan Mg. Corp., Chicago, Ill.

Owen Bucket Co., The, Cleveland, Ohio.

Stuebner Iron Works, G. L., Long Island

City, N. Y.

(Elevator.)
Hendrick Mfg. Co., Carbondale, Ps.
Webster & Weller Mfg. Companies,
Chicago, Ill.

——(Orange Peel.)
Hayward Co.. The, New York, N. Y.

(Ore Handling.)
Haward Co., The, New York, N. Y.
Owen Bucket Co., The, Cleveland, Onio.
Stuebner Iron Works, G. L., Long Island
City, N. Y.

BUILDERS and Contractors.
Barstow & Co., W. S., Reading, Pa.
Moyer Co., Tilghman, Allentown, Pa.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., J. C., Charlotts,
White Engineering Corp., J. G., New York.

BUILDINGS (Industrial.)
Belmont Iron Works, Philadelphia, P.
Blaw Knox Co., Pittaburgh, Pa.
Braden Steel Corp. Tuils Kkla.
Braden Steel Corp. Tuils Kkla.
Maryland Metal Building Co., Balto.,
McCintie-Marshall Ca., Pittsburgh, P.
Nashville Rridge Co., Nashville, Tenl
Truscon Steel Co., Voungstown, Ohio.
Virginia Bridge & Iron Co., Roanoke,

--- (Portable Sheet Metal.) Braden Steel Corp., Tulsa, Okla. Budler Mfg. Co., Kanass City, Mo. Maryland Metal Building Co., Baito., Md

BULKHEADS. Shore-Line Builders, Inc., Jacksonville, Fla. Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.
Beatty Machine & Mfg. Co., Hammend. rackson Co., Milwaukee, Wis.

BUSHINGS (Brass and Bronze.)

BUSINESS METHODS. Ernst & Ernst, New York, N. Y.

CABINETS (Steel.)
Angle Steel Stool Co., Plainwell, Mich

CABLES (Stud Link.)
Woodhouse Chain Works, Trenton, N. J. and Wire (Electric.)
American Steel & Wire Co., Balto., Md. Okenite Co., New York, N. Y. Rochling's Sons Co., John A., Trenton, N. Western Electric Co., New York City.

CABLEWAYS (Overhead Suspen-Broderick & Bascom Rope Co., St. Louis Sauerman Bros., Chicago, Ill.

CALCIUM CHLORIDE. Grasselli Chemical Co., Inc., Birmingham. Ala.
Bolvay Sales Corp., New York City.

CAN and Box-Making Machinery (Tin.) Bliss Co., E. W., Brooklyn, N. Y.

CAR Loaders and Unloaders. Barber-Greene Co., Aurera, Ill. Stephens-Adamson Mfg. Co., Birming-ham, Ala.

—Pullers.
Webster & Weller Mfg. Companies.
Chicago, Ill.

CARS (Dump, Industrial, Log-ging and Mine.)
Atlas Car & Mfg. Ca., The, Cleveland, O. Easten Car & Construction Co., Easton, Pa. Roppel Ind. Car & Equip. Cc., Keppel, Pa.
Scuthern Iron & Equipment Ca., Atlanta. Steps (Safety.)
Irving Iron Works Co., Long Island City.

CASTERS (Truck.) Service Caster & Truck Co., Albion, Mich.

CASTINGS (Brass, Bronze and Aluminum.)
Inter-State Fdry. & Mach. Wks., Jehnson
City, Tenn.
Moceanin Bushing Co., Chattanooga, Tenn. --- (Chilled Iron.)
Fuller Lehigh Co., Fullerton, Penna.

(Gray Iron.)

Jumbian Iron Works, Chattanoogs, Tenn.

Julier Lehigh Ca., Fullerton, Penna.

Jamorgan Pipe & Fdry. Co., Lynchburg. Hammond Iron Lo., Mach. Was., inter-State Fdry. & Mach. Was., City fenn. City fenn. National Cast Iron Pipe Co., Birming-National Cast Iron Pipe Co., Bos-National Cast Iron Pipe Co., Birming-nam. Als Boanohe Iron & Bridge Works, Inc., Ros-noke, Va. Salem Pdy. & Mach Wks., Salem, Va. U. S. Pipe & Foundry Co., Burlington, N. J.

-(Maileable Iron and Steel.) ken Roller Bearing Co., Canton, O.

---(Semi-Steel.)
Salem Fdry. & Machine Works, Salem,
Va.

-(Steel.) (Steel.)
Bethlehem Steel Co., Bethlehem, Pa.
Crucible Steel Casting Co., Lansdowne,
Delaware Co., Pa.
Deemer Steel Casting Co., New Castle, Deemer Steel Casting Co., Del.
Lunkenheimer Co., Cincinnati, Ohio.

CEMENT (High Temperature.) Harbison Walker Refractories Co., Pittsbg.

— (Portland.)

Alpha Portland Cement Corp., Birmingham, Als.
Lehigh Portland Cement Co., New York.
Louisville Cement Co., Louisville, Ky.
Portland Cement Asse., Chicago., Ill
Universal Atlas Cement Co., New York.

"-Guns."
Cement-Gun Co., Inc., Allentown, Pa. -Machinery.
-Chaimers Mfg. Co., Milwaukee, Wis.

CHAIN BLOCKS (See Blocks, Chain.)

CHAINS (Dredge, Quarry, Steam Shovel.)

Knoxville Iron Co., Knoxville, Tenn.
Woodhouse Chain Works, Trenton, N. J.

--- (High Speed Roller.)
Diamond Chain & Mfg. Co., Indianapolis. ——(Silent Drive.)
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

(Sprocket.)
Chain Belt Co., Milwaukes, Wis.
Diamond Chain & Mfg. Co., Indianapolis.
Morie Chain Co., Ithaca, N. Y.

--- (Welded.) Woodhouse Chain Works, Trenton, N. J.

CHAIRS (Opera and Theatre.)
Andrews Co., A. H., Chicago, Ill.

and Stools (Steel.)
Angle Steel Stool Co., Plainwell, Mich.

CHEMICALS.
Grasselli Chemical Co., Inc., Birmingham.

CHEMICAL TOILETS. Kaustine Co., Inc., Perry, N. T.

CHEMISTS, CHEMICAL ENGI-CHEMISTS, CHEMICAL ENGINEERS (Analytical.)
Barrow-Age Laboratories, Memphis, Tenn.
Flood & Co., Walter H., Chicago, Ill.
Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.
Meigs, Bassett & Slaughter, Phills., Pa.
Pleard Laboratories, The, Birmingham, Ala.
Pittsburgh Testing Laboratories, Pittsburgh Pa.
Southwastern Laboratories, Fort Worth.
Texas.
Stillman & Van Sicien, New York.
Wiley & Co., Inc., Baltimore, Md. -(Consulting, Paper Industry.)

CHIMNEYS (Concrete.)

Engineering Co., Birmingham, Ala. -(Radial Brick.)

Regineering Co., Birmingham, Ala.

CHLORIDE ACCUMULATOR.
Electric Storage Battery Co., Phila., Pa.

CHLORINATORS. Rees. S. P., Atlanta.

CIRCUIT BREAKERS. I. T. E. Circuit Breaker Co., Phila., Pa. Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CITY AND TOWN PLANNING. Draper, E. S., Charlotte, N. C. Ludlow Engineers, Winston-Salem, N. C.

CLOCKS (For all purposes.)
Kaiser Klock Co., L. E., Baltimore, Md. — (Watchman's Portable.)
Davis-Paradis Watchman's Clock Corp.,
New York. N. Y.
Kaiser Klock Co., L. E., Baltimore, Md.

CLUTCHES (Friction.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Foote Bros. Gear and Mach. Co., Chicago.
Schultz & Son. A. L., Chicago, Ill.
Wood's Sons Ce., T. B., Chambersburg. Pa.

COAL (Bituminous.) iammond Iron Co., Birmingham, Ala. loss-Sheffield Steel & Iron Co., Birming-ham, Ala. Tennesse Coal, Iron & Railroad Co., Bir-mingham, Ala.

—and Ash-Handling Mchy.
Ailen-Sherman-Hoff Co., Phila., Pa.
Chain Belt Co., Milwaukee, Wis
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago.
Stephens-Adamson Mfg. Co., Birmingham, Ala.
Webster & Weller Mfg. Companies, Chicago, Ill.

-Bunkers (Cast Iron.) en-Sherman-Hoff Co., Phila., Pa. -Tipples. American Bridge Co., New York, N. Y. Virginia Bridge & Iron Co., Roanoke, Va.

COCKS (Service.) Merco Nordstrom Valve Co., San Francisco,

Merco Nordstrom Calif.

COKE.

Hammond Iron Co., Birmingham, Ala.

Sloss-Shemfeld Steel & Iron Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co.,

Birmingham, Ala.

COLUMNS (Cast Iron.) U. S. Pipe & Foundry Co., Burlington, N. J.

COMPRESSORS (Gasoline Extraction.)
Sullivan Machinery Co., Chicago, Ill.

CONCRETE (Accelerators.)

Block Machinery.
Blystone Mfg. Co., Cambridge Springs, Pa.

Block Pallets.
Commercial Shearing & Stamping Co.,
Youngstown, Ohio.

Construction (Reinforced.)
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago
Rust Engineering Co., Birmingham.

---Floor Slabs.
American Cement Tile Mfg. Co., Pitts-burgh, Pa.

-Information Only.
Portland Cement Asso., Chicago, Ill. —Mixers.

Blystone Mfg. Ca., Cambridge Springs, Pa.
Chain Belt Ca., Milwaukee, Wis.
Dunning & Boschert Press Co., Inc.,
Syracuse, N. T.
Jaeger Machine Co., Columbus, Ohlo.
Lansing Co., Lansing, Mich.

Pipe Machinery (See Pipe Machinery, Concrete.)

—Placing Equipment.
National Equipment Corp. (Insley Division), Milwaukee, Wis.

-Road Curing.
McEverlast, Inc., Les Angeles, Cal. ----Road Hardeners.
Solvay Sales Corp., New York City.

-Roofing Tile,
-Roofing Tile,
-Roofing Tile Mfg. Co., Pitts-

CONDENSERS.
Chicago Pneumatic Tool Co., New York.
Ingersoil-Rand Co., New York, N. York.
Manistec From Works Co., Manistec, Mich
Westinghouse Electric & Mfg. Co., E.
Pittsburgh, Pa.

CONDUITS (Electric, Interior. Steel.)
Western Electric Co., New York City.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

CONTRACTORS (Airports.)
Miller & Asso., Wendell P., Chicago. -(Bridge.)

Kansas City Br dge Co., Kansas City, Mo. Snare Corp., Frederick, New York. ——(Drainage and Dredging.)
Arundel Corp., The. Baltimore. Mc
Atlantic Gulf and Pacific Co., New Y Atlantic tout and Facine Co., New York.

—(Electrical, O., Savannah, Ga. Walker Electrical Co., Atlanta, Ga. Webb Electric Co., Anderson. S. C.

—(Foundations and Dams.)
Calligan & Co., A. H., Richmond, Va., Snare Corp., Frederick, New York, N. Y. —(General.) Angie-Blackford Co., Greensbore, N. C. Blair, Algernon, Montgomery, Als. Charleston Constructors, Ina., Charleston,

S. C. Cornell-Young Co., Inc., Macon, Ga. Fiske-Carter Constr. Co., Greenville, S. C. Oridley Constr. Co., Lee A., Knoxville,

Fishe-Carter Co., Lee A., Knoxvine, Tenn.
Oridley Constr. Co., Lee A., Knoxvine, Tenn.
Saville, Ine., Allen J., Richmond, Va.
Seaboard & Southern Constr. Co., Ine., Jackson'ille, Fla.
Snare Corp., Frederick, New York, N. Y.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York. White Engineering Corp., J. G., New York.

—(Industrial Buildings.)
Angie-Blackford Co., Greensboro, N. C.
Barstow & Co., W. S., Reading, Pa.
Blair, Algernon, Montgomery, Ala.
Fiske-Carter Conatr. Co., Greenville, S. C.
Seaboard & Southern Constr. Co., Inc.,
Jacksonville, Fla.
Snare Corp., Frederick, New York, N. Y.
Blone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
White Engineering Corp., J. G., New York.

—Mill Village.

—Mill Village.

Hornbuckle Contracting Co., Atlanta, Ga.

——(Power Plants.)
Snare Corp., Frederick, New York, N. Y.
——(Railroad.)
Calligan & Co., A. H., Richmond, Va.
Cornell-Young Co., Inc., Macon, Gs.
——(Reinforced Concrete.)
Blair, Algernon, Montgomery, Ala.
Cement Gun Construction Co., Chicago.
Gunite Conc. & Constr. Co., Kanass City.
Seaboard & Southern Constr. Co., Inc.,
Jacksonville, Fla.
Tucker & Laxton, Charlotte, N. C.
——(Rond and Street Paving.)
Fiske-Carter Constr. Co., Greenville. S. C.
Gridley Constr. Co., Lee A., Knoxvills.
Tenn.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrary Co., The J. B., Atlanta, Ga.
McCrary Co., The J. B., Atlanta, Ga.
Hornbuckle Contracting Co., Columbus, Ga.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrary Co., The J. B., Atlanta, Ga.
McCrary Co., The J. B., Atlanta, Ga.
Snare Corp., Frederick, New York, N. T.
Tucker & Laxton, Charlotte, N. C.
——(Swimming Pool.)

Turser a Lation, Color of Colo

Pittsburgh-Des Moines Steel Co., f burgh. Pa. —Machinery and Supplies.

—Machinery and Supplies.
(New.)
Bay City Shovels, Inc., Bay City, Mich.
Weller & Co., Birmingham, Ala.
W-K-M Co., Inc., Houston, Texas.
—Machinery and Supplies.
(Used.)
(Christian & Ca., J. R., Housten, Tex.
Clapp, Billey & Hall Equip. Co., Chiesge.

Christian & Ca. J. R., Housten, Assa. Clapp, Elley & Hall Equip. Co., Chiesge Ill.
Cohen, Chas. F., Lima. C.
Dempster Equip. Co., Knoxville, Tenn.
Equip. Sales & Rentais Cu., Prittsburgh
Grey Steel Products Co., New York, N.
Johnson & Hoellor, Fernwood, Fr.
Marine Metal & Supply Co., New York.

CONTRACT WORK WANTED. Bee following classifications:)
Boiler and Tank Works.
Castings. Foundry and Machine Shops. Machinery (Special.) Ornamental Iron Work. Ornamena. Patterns. Sheet Metal Work. Structural Steel and Iron. Welding Plants.

CONVEYING AND ELEVATING MACHINERY.

Barber-Greene Co., Aurora, Ill.
Chain Belt Co., Milwaukee, Wis.
McLanahan-Stone Machine Co., Hollidaysburg. Pa.
Stephens-Adamson Mfg. Co., Birmingham, Ala.
Universal Crusher Co., Cedar Rapids, Iowa.
Websigs & Walley lowa. Web<ter & Weller Mfg. Companies, Chicago, III.

COPING MACHINES.
Beatty Machine & Mfg. Co., Hammend.

COPPER AND BRASS.
Chase Brass & Copper Co., Waterbury. nn. er and Brass Research Assn., New York.

CORRESPONDENCE SCHOOLS.
International Correspondence Schools,
Scranton, Pa.

COST SERVICE. Le Baron, E. T., Jacksonville, Fis.

COTTON GIN MACHINERY. ntinental Gin Co., Birmingham, Ala.
—Mill Machinery.
uthern Spindle & Flyer Co., Inc., Charlotte, N. C.

COUNTING APPARATUS. Veeder-Root, Inc., Hartford, Co.

COUPLINGS.
Goldens' Fdy. & Mach. Co., Columbus, Ga. -(Shaft.) Sros. Gear & Machine Co., Chicago. Sons Co., T. B., Chambersburg, Pa.

CRANES. ARLAN ES.
Austin Kachinery Corp., Muskegon, Mich.
Buckeye Traction Ditcher Co., Findiay, O.
National Equipment Co., (Insiey, Kochring, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Jama, Ohio.
Whiting Corp., Harvey, Ill. ---Cantilever, Gantry. Whiting Corp., Harvey, Ill.

Whiting Corp., Harvey, III.

—(Crawler.)
Buckeye Traction Ditcher Co., Findiay, O.
Harrischfeger Corp., Milwaukee, Wis.
Northwest Engineering Co., Chicago, III.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

Thew Shorel Co., The, Lorain, Ohio.
—(Crawling Tractor.)
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
—(Electric Traveling.)
Harnischeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp.,
Milwaukee, Wis.
Whiting Corp., Harvey, Ill.

-(Full Circle Steam and Elec-

tric.)
Austin Machinery Corp., Muskegon, Mich.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima. Ohio.
Thew Shovel Co., The, Lorain, Ohio.

Thew Shovel Co., The, Lorain, Onio.

— (Gasoline.)
Buckeye Traction Ditcher Co., Findlay, O. Harnischfeger Corp., Milwaukee, Wis. Industrial Brownhoist Corp., Cleveland, O. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.

Whiting Corp., Harvey, 111.

Whiting Corp., Harvey, III.

—(Locomotive.)
Bucyrus-Erie Co., Erie, Penna.
Industrial Brownhoist Corp., Cleveland, O.
Mortiwest Engineering Co., Chicago, III.
Ohio Fower Shovel Co., Lims. Ohio.

—(Material Handling.)
Bay City Showls, Inc., Bay City, Mich.
Industrial Brownhoist Corp., Cleveland, O.
Mortiwest Engineering Co., Chicago, III.
Ohio Power Shovel Co., Lima, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Universal Crane Co., Lorain, Ohio.

Portable (Floor.)

Beatty Machine & Mfg. Co., Hammond, Ind.

(Traveling, Hand Power.)
Harrington Ca., The. Philadelphia, Pa.
Whiting Corp., Harvey, Ill.

CRAWLERS (Tractor.)
Riddell Co., W. A., Bucyrus, Ohie
Trackson Co., Milwaukee, Wis.

CREOSOTED MATERIALS.
Amor. Croosote Wks., Inc., New Orieans.
Dolaware Wood Preserving Co., Phila.
Bayannah Croosoting Ca., Savannah. Gs.

CREOSOTED TIMBER.

Ayer & Lord Tie Co. Chicago. Ill

Brown Wood Preserving Co., Louisville,

CREOSOTE OIL.

Amer. Creosote Wks., Inc., New Orleans.

Ayer & Lord Tie Co., Inc., Chicago.

CREOSOTING (Wood Materials.) Amer. Creosote Wks., Inc., New Orleans. Amer. Creosoting Co., Inc., Louisville, Ky. Brown Wood Preserving Co., Louisville,

Ky.
Delaware Wood Preserving Co., Phila
Eppinger & Russell Co., New York, N. Y.
Gulf States Cress. Co., Hattiesburg, Miss.
Prettyman & Sons, J. F., Charleston, S. C.
Savannah, Cresoting Co., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.
Wales Wood-Preserving Co., Norfolk, Va.

CROSS-ARMS (Creosoted.) Amer. Creosote Wks., Inc., New Orleans. Amer. Creosoting Co., Inc., Louisville, Ky. Savannah Creosoting Co., Savannah, Ga. — (Zinc Meta Arsenite Treated.) Curtin-Howe Corp., New York, N. Y.

CROSS-TIES (Creosoted.)
Amer. Creosote Wks., Inc., New Orieans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Bppinger & Russell Co., New York, N. Y.
Prettyman & Sons, J. F., Charleston, S. C.

Savannah Creosoting Co., Inc., Savannah, Ga. Taylor-Colquitt Co., Spartanburg, B. C. --- (Zinc Meta Arsentic Treated.)
Curtin-Howe Corp., New York, N. Y.

CRUSHED STONE (Road Concrete and Ballast.)
American Limestone Co.. Knoxville, Tenn.
Boxiey & Co., W. W., Boanoke, Vs.

CRUSHERS (Coal and Coke.) Fuller Lehigh Co., Fullerton, Pa.

-Rock. versal Crusher Co., Cedar Rapids, Universal

CRUSHING and Pulverizing Ma-CRUSHING and Pulverizing ma-chinery.

Allis-Chaimers Mfg. Co., Milwaukee, Wis. Day Pulverizer Co., Knoxville, Tenn. Fuller Lehigh Co., Fullerton, Pa. McLanahan-Stone Machine Co., Holliday-burg, Pa. Raymond Bros. Impact Pulverizer Ce., Chicago, Ill. Universal Crusher Co., Cedar Rapids, Iowa. W-K-M Co., Inc., Houston, Texas.

CULVERT PIPE (Cast Iron.)
Amer. Cast Iron Pipe Co., Birmingham.
Cast Iron Pipe Research Assn., Chicago.
U. S. Pipe & Foundry Co., Burlington,
N. J.

——(Corrugated Metal.)
American Sheet & Tin Plate Co., Pittaburgh, Pa.
Armoc Culvert Mfrs. Asso., Middletown, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Dixie Culvert Mgc. Co., Lattle Rock, Ark.
Louisiana Corr. Culvert Co., Baton Rouge, Louisiana Corr. Culvert Co., Baton Houge, Lo.
Tenn. Metal Culvert Co., Nashville, Tenn. Western Metal Mfg. Co., Houston, Texas.

CURB PROTECTORS (Steel Burs.) Truscon Steel Co., Youngstown, O.

CUTTERS (Wire Rope.) Leschen & Sons Rope Co., A., St. Louis.

CYLINDERS (Compressed Air, Gas.)
Janney, Jr., Jos. A., Phila., Pa.
National Tube Co., Pittsburgh, Pa.

DERRICKS and Derrick Fittings.
Clyde Iron Works Sales Co., Duluth, Minn.
Basgen Derrick Co., Chicago, Ill.

DESKS (School.) Andrews Co., A. H., Chicago, Ill. -(Steel Factory.)

DITCHING MACHINERY.
Barber-Greene Co., Aurora, Ill.
Bay City Showels, Inc., Bay City, Mich.
Buckeye Traction Ditcher Co., Findlay, O.
Harnischfeger Corp., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland,
Northwest: Engineering Co., Chicago, Ill.
Ohio Fower Showel Co., Lima, Ohio.
Owen Bucket Co., The, Cleveland, O.

DOORS (Fire.) Merchant & Evans Co., Philadelphia, Pa. Bichards-Wilcox Mfg. Co., Aurora, Ill. ——(Fireproof, Air Chamber.) Wilson Corp., The J. G., New York.

--- (Freight Elevator.)
Peelle Co., The, Brooklyn, N. Y.

— (Kalamein.) Moeschi-Edwards Corr. Co., Cincinnati.

— (Rolling, Steel and Wood.)
Kinnear Mfg. Co., The, Columbus, Oh
Mahon Co., B. C., Detroit, Mich.
Moeschi-Edwards Corr. Co., Checinati.
Peelle Co., The, Brooklyn, N. Y.
Wilson Corp., The J. G., New York.

— (Steel.)
Detroit Steel Products Co., Detroit, Mich.
Truscon Steel Co., Youngstown, O.
— (Tubular Steel).
Bayley Co., Wm., Springfield, O.

DRAFTSMEN'S SUPPLIES. Weber Co., Inc., F., Philadelphia, Pa.

DRAGLINE EXCAVATORS.

Austin Machinery Corp., Muskegon, Mich.
Bucyrus-Erie Co., Erie. Penna.
Hurnische Mrg., Corp. Chicago, Wis.
Mrg., Corp. Chicago, Wis.
National Equipment Corp. (Koehring, Insley), Milwaukee, Wis.
Norhwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Lima, Ohio. Sauerman Bros., Chicago, Ili. Thew Shoyel Co., The, Lorain, Ohio. Universal Power Shovel Co., Milwaukes, Wix.

DREDGES (Dipper, Elevator, Hydraulic.) Bay City Shoveis, Inc., Bay City, Mich. Bucyrus-Erie Co., Erie, Pa. Ellicott Machine Corp., Baitimore, Md. Morris Machine Wax, Baidwinsville, N. Y.

DREDGING (River and Harbor Improvement.)
Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York. —Machinery.

American Steel Dredge Co., Fort Wayne,
Ind.

Ellicott Machine Corp., Baltimore, Md.
Hayward Co., The, New York.

DRILLING CONTRACTORS.

Mott Core Drilling Co., Huntington, W. va.
Pennsylvania Drilling Co., Pittsburgh, Pa.
Southern Drilling Co., Saitville, Va.
Sprague & Henwood, Inc., Scranton, Pa.

DRILLS (Artesian Well.)
Virginia Machinery & Well Co., Inc.,
Richmond, Va.

——(Electric.)
Chicago Pneumatic Tool Co., New York.
Sullivan Mchy. Co., Chicago. —(Pneumatic.)
Chicago Pneumatic Tool Co., New York
Ingersoll-Rand Co., New York, N. Y.
Sulivan Machinery Co., Chicago, Ill.

DRINKING FOUNTAINS.
Rundle-Spence Mfg. Co., Milwaukee, Wis.
Taylor Co., Halsey W., Warren, Ohio.

DROP-FORGING MACHINERY. Bliss Co., E. W., Brooklyn, N. Y.

DRYERS (Gravel and Sand.) Ripley Fdy. & Mch. Co., Ripley, Ohio

DRY KILNS and Equipment, Moore Dry Kiln Co., Jacksonville, Fla

DRYING MACHINERY.

American Process Co., New York, N. T.

DUMP TRUCK BODIES and HOISTS.

Commercial Shearing & Stamping Co., Youngstown, Ohio.

Faston Car & Construction Co., Easton, Pa. Lee Trailer & Body Co., Inc., Plymouth, Ind.

DUSTPROOFING (Concrete.) Solvay Sales Corp., New York City. Sonneborn Sons, Ins., L., New York.

DYESTUFFS.

Du Pont de Nemours & Co., Inc., E. 1.,

Wilmington, Del.

DYNAMITE (Industrial and Agricultural.)
Du Pont de Nemours & Co., Inc., E. I.,
Wilmington, Del.
Hercules Powder Co., Inc., Wilmington. Hereus Del.

ELECTRICAL Instruments and Supplies.

Adams Electric Co., Frank, St. Louis.
General Electric Co., Schenectady, N. Y.
Western Electric Co., New York City.

Western Electric Co., New York City.

—Machinery (Generators, Motors, etc., New.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Elliotte, Howard C., Miami, Fia.
Fairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Howell Electric Motors Co., Howell, Mich.
Rockford Power Machy. Co., Rockford, Ill.
Westinghouse Electric & Mfg. Co., E.
Pittsburgh, Pa.

—Machinery (Generators, Mor.

Pittsburgh, Pa.

—Machinery (Generators, Motors, etc., Used.)
Belyea Co., Inc., New York City.
Delta Equipment Co., Philadelphia, Pa.
Electric Service Co., Cincinnati, Ohio.
Electrical Equip. Co., Raleigh. V. General Electric Co., Schenectady, N. J.
Gregory Electric Co., Chicago.
Nashville Industrial Corp., Old Hickery.
Tenn.
Nussbaum & Co. V. M. Fr.

Tenn.
Nussbaum & Co., V. M., Ft. Wayne, Ind.
O'Brien Machinery Co.. The, Phila., Pa
Randle Machinery Co., The, Cincinnati, O.
Rockford Power Mehy. Co., Rockford, Ill.
Stewart Elec. Co., John A., Cincinnati.

Stewart Elec. Co., John A., Cincinnati.

—Machinery Bepairing (Motors, Generators, etc.)

Electric Service Co., Cincinnati, Ohio.

Gregory Electric Co., Chicago.

ELECTRIC LIGHTING.
General Electric Vapor Lamp Co.,
Hoboken, N. J.

ELECTRIC SHOVELS (See

ELEVATOR Cables. Leschen & Sons Rope Co., A., St. Louis. ---Enclosures.
Dufur, Baggott & Co., Baltimore, Md. —(Equalizers.)
vans Elevator Equalizer Co., Bedferd,

ELEVATORS (Electric.)
American Elevator & Machine Co., Inc., American Elevator & Machine Co., I Louisville, Ky. Millner Co., St. Louis, Mo. Warsaw Elevator Co., Baltimore, Md. Warsaw Elevator Co., Baltimore, Md.

——(Hand and Belt Power.)
American Elevator & Machine Co., Inc.,
Louisville, Ky.
Millner Co., St. Louis, Mo.
Warsaw Elevator Co., Baltimore, Md. — (Hydraulic.)
American Elevator & Machine Co., Inc.,
Louisville, Ky.
Warsaw Elevator Co. Baltimore, Md. - (Portable.)
O. K. Clutch & Machy. Co., Columbia,

ENGINEERS (Airports.)
Jenny, L. Aifred, Dumont, N. J.
MacElwee & Crandall, Inc., Cambridge,
Mass.
Mass

Snaw Ce, Russell B., St. Louis, and.

— (Appraisal.)
American Appraisal Co., Milwaukee, Wis.
Bartlett Engrs., Inc., Terrell, San Antonio, Texas.
Battey & Kipp, Inc., Chicago, Ill.
Fay, Spofford & Thorndike, Boaton, Mass.
Ford, Bacon & Davis, Inc., New York.
Jenny, L. Alfred, Dumont, N. J.
Lockwood Greene Engrs., Inc., New York
City.

Lockwood Greene Engrs., http://linkwood.city. City. Ludlow Engineers, Winston-Salem, N. C. Main, Inc., Chas. T., Boston, Mass. Sanderson & Porter, New York, N. X. Wadleigh & Bailey, Washington, D. C. White Engineering Corp., J. G., New York.

White Engineering Corp., J. G., New York. Wiedeman and Singleton, Inc., Atlanta. Williamson, Lee H., Charlottesville, Va

-(Aviation.)
ler & Asso., Wendell P., Chicago, Ill.
w Co., Russell B., St. Louis, Mo. Miller

Shaw Co., Russell B., St. Louis, Mo.

(Bridge.)

Atlantie Bridge Co., Greensboro, N. C.,
Billingsley, James W., New Orleans, La.
Fay, Spofford & Thorndike, Boston, Mass.
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Hardaway Contracting Co., Columbus, Ge.
Hedrick, Inc., Ira G., Hot Springs, Nat'l
Park, Ark.
Howerton Engineering Co., Asheville, N.C.
Steel & Lebby, Knoxville, Tenn.
Turner, C. A. P., Minneapolis, Minn.
Virginis Bridge & Iron Co., Roanoke, Va.
Wheeler, Walter H. Minneapolis, Minn.

— (Chemical.)

whoster, water H. Millespoils, sains.
——(Chemical.)
Barrow-Agee Laboratories, Memphis, Tena.
Dow & Smith, New York, N. Y.
Flood & Co. Walter H., Chicago, Ill.
Pleard Laboratories, Birmingham, All.
Pittaburgh Testing Laboratories, Pitta-

——(Civil.)
Airmap Corp. of Amer., Brooklyn, N. T.
Battery & Kipp, Inc., Chleage, Ill.
Charlton & Davis, Fr. Lauderdale, Fls.
Parker & Mclinton Fr. Lauderdale, Fls.
Gardner & Howe, Memphis Tra.
R. Y.
Gardner & Go., J. E., Baltimore, Md.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs, Nat'l
Hills Ark.
Hills George B., Jacksonville, Fls.
MacElwee & Crandall, Inc., Cambridge,
Main. Inc. Chas. T., Roston, Mass. -(Civil.)

Mass.
Main, Inc., Chas. T., Boston, Mass.
Main, Inc., Chas. T., Boston, Mass.
McCrady Co., John, Charleston, S. C.
Piatt, William M., Durham, N. C.
Buggles, Inc., Charles H., West Palm
Beach, Fla.
Spoon & Lewis, Greensboro, N. C.
Spring, Charles Herbert, Greensbore, N. C.
Stele & Lebby, Knoxville, Tenn.
White Engr. Corp., J. G., New York.

White Engr. Corp., J. G., New York.

— (Consulting.)
Airmap Corp. of Amer., Brooklyn, N. T.
Barstow & Co., W. S., Beading, Pa.
Biggs Engr. Co., W. E., Knowville, Tenn.
Charlton & Davis, Pt. Lauderdale, Fis.
Converse & Co., J. B., Mobile, Ala.
Engineering Service Corp.. Houston, Tex.
Harza Engineering Co., Chicago.
Hedrick, Inc., Ira G., Hot oprings, Nat'l.
Park, Ark.
Herty, Charles H., New York City.
Lockwood Greene Engrs., Inc., New York
City.

Lockwood Greene Engrs., Inc., New York
City.
Main, Inc., Chas. T., Boston, Mass.
McCrary Co., John, Charleston, S. C.
Ophuls & Hill, Inc., New York, N. Y.
Pennington, J. R., Carson City, New York, S. Simmons, Inc., Charles H., West Palm Beach, Fis.
Simmons, Inc. & Associates, B. Stanley,
Washington, D. C.
Smith, Eiroy G., Augusta, Gs.
Stillman & Van Sicien, New York, N. Y.
Wadleigh & Bailey, Washington, D. C.
White Engineering Corp., J. G., New York,
Wiedeman & Singleton, Inc., Aluanta, Gs.
Williamson, Lee H., Charlottesville, Va.

Alpaugh & Sons, Chas. W., Manasass, Va.
Battay & Kipp. Inc., Chicago, Ill.
Byliesby Engineering and Management
Corp., Chicago, Ill.
Cooper & Co., Hugh L., New York, N. Y.
Floyd & Lochridge, Dallas, Texas.
Gardner & Howe, Memphis, Tenn.
Hardaway Centracting Co., Celumbus, Gs.
Harza Engineering Co., Chicago.
Hedrick Inc., Ira G., Hot Springs Nat'l.
Fark Ark.
Lee, William S., Charlotte, N. C.
Main, Inc., Chas. T., Boston, Mass.
Birrine & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
Wheeler, Walter H., Minnespolls, Minn.
White Engr. Corp., J. G., New York.

(Drainage and Irrigation.)
Floyd & Lechridge, Dallas, Texas.
Ford, Bacon & Davis, Inc., New York.
Fuller & McClintock, New York, N. Y.
Hills Co., George B., Jacksonvilla, Fla.
Lacidow Engineers, Winston-Salem, N. C.

——(Efficiency.)

Barstow & Ca., W. S., Beading, Pa.

Brust & Ernst, New York, N. Y.

-(Electrical.) Battey & Kipp, Inc., Chicago, Ill. Christian, Walter P., Greensboro, N. C. Cooper & Ca., Hugh L., New York, N. Y. Engineering Service Corp., Houston.

Texas.

Hossier Engineering Co., Chicago, Ill.

Lee, William S., Charlotte, N. C.

Lockwood Greene Engrs., Inc., New York

Lockwood Greene Engrs., Inc., New Yor City.
Main, Inc., Chas. T., Boston, Mass.
Mullergren, Arthur L., Kansas City, Me Banderson & Porter, New York, N. Y. Stane & Webster, Inc., Boston, Mass Tucker & Laxton, Charlotte, N. C. Webb Electric Co., Anderson, S. C. Willey & Wilson, Lynchburg, Va.

-(Electric-Light and Power — (Electric-Light and Power Plants.)
Barrows, H. K., Boston, Mass.
Battoy & Kipp, Ine., Chicago, Ill.
Biggs Eng. Co., W. E., Knoxville, Tenn.
Byllesby Engineering and Management
Corp., Chicago, Ill.
Cooper & Ca. Bugh L., New York, N. Y.
Ford. Bacon & Davis, Inc., New York, Called William S., Charlotte, N. C.
Asin, Inc., Ches. T., Boston, Mass.
Mullergren Arthur L., Kansas City, Mo.
Banderson & Forter, New York, N. Y.
Sconeld Engineering Co., Phila., Pa.
Steme & Webster, Inc., Boston, Mass.
Tucker & Laxton, Charlotte, N. C.
White Engineering Copp., J. G., New York.
White Engineering Copp., J. G., New York.
White Co., Gilbert C., Durham, N. C. Plants.)

Floyd & Lochridge, Dallas. Harza Engineering Co., Ch

Gas.)

Byllesby Engineering and Management
Corp., Chicago, Ili.

Ferd, Bacon & Davis, Inc., New York.

——(Geological.)
De Kalb, Courtenay, New York City.
Froehling & Robertson, Richmond, Va.
Wadleigh & Bailey, Washington, D. C.

(Harbor Improvements.)

Billingsley, James W., New Orleans, La.

Engineering Service Corp., Houston, Spofford & Thorndike, Boston, Mass.

—(Heating.)

Rattey & Kipp, Inc., Chicago, Ill.

Battey & Kipp, Inc., Chicago, Ill.

Biggs Eng. Co., W. E., Knoxville, Tenn.

Wiley & Wilson, Lynchburg, Va.

Wiley & Wilson, Agriculture,

—(Hydraulic.)
Alpaugh & Sons, Chas. W., Manassas, Va.
Barrows, H. K., Boston, Mass.
Floyd & Lochridge, Dallas, Texas.
Fuller & McClintock New York, N. Y.
Harza Engineering Co., Chicago,
Main, Inc., Chas. T., Boston, Mass.

Main, Ine., Chas. T., Boston, Mass.

—(Hydro-electric.)
Alpaugh & Sons, Chas. W., Manassas, Vs.
Barrows, H. K., Boston, Mass.
Batter & Kipp, Ine., Chicago, Ill.
Byllesby Engineering & Management
Curp., Chicago, Ill.
Cooper & Co., Hugh L., New York, N. T.
Harza Engineering Co., Chicago,
Lee, William S., Charlotte, N. C.
Ludiow Engineers, Winston-Salem, N. C.
Main, Inc., Chas. T., Boston, Mass.
Mees & Mess, Charlotte, N. C.
Platt, William M., Durham, N. C.
Sanderson & Porter, New York, N. T.
Sconeld Engineering Co., Phila., Pa.
Sirrine & Co., J. E., Greenville, S. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—(Ice and Refrigerating.)

-(Ice and Refrigerating.) Engineering Service Corp., Texas. Ophuls & Hill, Inc., New York, N. Y.

Ophuls & Hill, Inc., New York, N. Y.

—(Industrial Plants.)
Barstow & Co., W. S., Reading, Pa.
Bartlett Engra, Inc., Tarrell, San Antonio, Texas.
Battey & Kipp, Inc., Chicago, Ill.
Biggs Engr. Co., W. E., Knoaville, Tens.
Billingsley, James W., New Orleans, La.
Charleston Constructors, Inc., Charleston, S. C. Charleston, S. C. Charleston, S. C. Charles, La. Chicago, Ill. arleston Constructors, Inc., Conser. ton, S. C., coser, Older & Quinian, Inc., Chicago, neers & Co., J. B., Mobile, Ala., y. Spofford & Thorndike, Boston, Mass., Confer & Howe, Memphis, Tenn. einer & Co., J. E., Baltimore, Md. Herty, Charles H., New York City.
Hills Co., George B., Jacksonville, Fis.
Lockwood Greene Engrs., Inc., New York City. acElwee & Crandall, Inc., Cambridge,

MacElwee & Crandall, Inc., Cambridge, Mass.
Main, Inc., Chas. T., Boston, Mass.
Mees & Mees, Charlotte, N. C.
Morgah Constr. Co., Worcester, Mass.
Mullergren, Arthur L., Kansss City, Ma.
Ophuls & Hill, Inc., New York, N. Y.
Prescher & Co., Inc., G. Lloyd, Atlants.
Sanderson & Porter, New York, N. Y.
Scoffeld Engineering Co., Phila., Pa.
Simmons, Inc. & Associates, B. Stanley,
Washington, D. C. Greenville, S. C.
Smith, Elroy G., Augusta, Ga.
Stone & Webster, Inc., Boston, Mass
Turner, C. A. F., Minnespolis, Min.
Williamson, Lee H., Charlottesville, Va.

—(Industrial Survey.)

nverse & Co., J. B., Mobile, Ala.

etwood Greene Engra., Inc., New York City. Wadleigh & Bailey, Washington, D. C.

(Inspection and Tests.)
Barrow-Ages Laboratories, Memphis, Tens.
Conard & Busby, Burlington, N. J.
Dow & Smith, New York, N. Y.
Flood & Co., Waiter H., Chicago, Ill.
Proching & Robertson, Inc., Richmond,

Va.

Hunt Co., Robert W., Chicago, Ill.

Pleard Laboratories, Birmingham, Ala.

Pittsburgh Testing Laboratories, Pittsburgh, Pa.

Southwestern Laboratories, Ft. Worth,

——(Landscapes.)
Draper, E. S., Charlotte, N. C.
Kirbye & Co., Raleigh, N. C.
McCrady Co., John, Charleston, S. C.

(Lighting.)

Battey & Kipp, Inc., Chicago, Ill.

Byllesby Engineering & Management
Corp., Chicago, Ill.

Ford. Bacon & Davis, Inc., New York.

General Electric Vapor Lamp Co.,

Hoboken, N. J.

Wiley & Wilson, Lynchburg, Va.

——(Mechanical.)
Battey & Kipp, Inc., Chicage, Ill.
Charlton & Davis, Ft. Lauderdale, Fla.
Engineering Service Corp., Houston,
Texas. Texas.
Invicta Engineering Co., Birmingham, Ala.
Lee, William S., Charlotte, N. C.
Lockwood Greene Engrs., Inc., New York

Lockwood Greene Engrs., Inc., New York City. Main, Inc., Chas. T., Boston, Mass. Mees & Mees, Charlotte, N. C. Meigs, Bassett & Slaughter, Phila, Pa. Sanderson & Porter, New York, N. Y. Wiley & Wilson, Lynchburg, Va.

-(Mining. See Engineers, Ge

ological.)

Barliett Engrs., Inc., Terrell, San Astonio, Texas.
Billingsley, James W., New Orleans, La. Consoer. Older & Quinlan, Inc., Chicage. Dow & Smith, New York, N. Y.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fla.
Howerton Engineering Co., Asheville, N. C.
Knowles, Inc., Morris, Pittsburgh, Pa.
Luddow Engineers, Winston-Stelm, N. C.
McCrary Co., The J. B., Atlanta, Ga.
Spoon & Lewis, Greensbore, N. C.
White Co., Gilbert C., Durham, N. C.

White Co., Gilbert C., Durnam, N. C.

—(Paving and Roads.)
Billingsley, James W., New Orleans, La.
Dow & Smith, New York, N. Y.
Freeland, Roberts & Co., Nashvilla, Tenn.
Harrub Engr. Co., C.N., Nashville, Tenn.
Howerton Engineering Co., Asheville, N. C.
Ludiow Engineers, Winston-Salem, N. C.
Platt, William M., Durham, N. C.
Spoon & Lewis, Greensboro, N. C.
White Co., Gilbert C., Durham, N. C.

Soofield Engr. Co., Phila., Pa.

—(Public Service Properties.)

Byllesby Engineering & Management
Corp., Chicago, Ili.
Cooper & Co., Hugh Ls., New York, N. Y.
Ford, Baoon & Davis, Inc., New York,
Fuller & McClintock, New York, N. Y.
Knowles, Inc., Morris, Pittsburg, Pa.
Main, Inc., Chas. T., Boston, Mass.
Sanderson & Porter, New York, N. Y.
Scofield Engineering Co., Phila., Pa.
Stone & Webster, Inc., Boston, Mass.
White Engineering Corp., J. G., New
York.

—(Rullroad.) ---(Production.)
Scofield Engr. Co., Phila., Pa.

(Railroad.)

Jenny, L. Alfred, Dumont, N. J.

Mees & Mees, Charlotte, N. C.

Mees & Mees, Charlotte, N. C.

—(Reinforced Concrete Bridges,
Buildings, etc.)
Atlantic Bridge Co., Greensboro, N. C.
Battey & Kipp, Inc., Chicago, Ill.
Fay, Spofford & Thorndike, Boston, Mass.
Freeland, Roberts & Co., Nashville, Tenn.
Gardner & Howe, Memphis, Tenn.
Greiner & Co., J. E., Baltimore, Md.
Lockwood Greene Engrs., Inc., New York
City. Lockwood Greene anges, and City.
City.
Main, Inc., Chas. T., Boston, Mass.
Steel & Lebby, Knoxville, Tenn.
Tucker & Larton, Charlotte, N. C.
Turner, C. A. P., Minneapolis, Minn.
Wheeler, Walter H., Minneapolis, Minn.

--- (Sanitary.)
Harza Engineering Co., Chicago.

— (Sea Walls.)
Ruggles, Charles H., Inc., West Palm
Beach, Fla.

— (Sewage Disposal Plants.)
Fuller & McClintock, New York, N. T.
Kaustine Co., Inc., Perry, N. T.
Ludlow Engineers, Winston-Salem, N. C.
McCrary Co., The, J. B., Atlants, Ga.
Platt, William M. Durham, N. C.
Wiedeman and Singleton, Inc., Atlants.

Wiedeman and Singleton, Inc., Atlanta.

—(Sewernage and Waterworks.)

Barrows, H. K., Boton, Mass.
Constd. & Buzby, Burlington, N. J.
Ford, Bacon & Davis, Inc., New York,
Fuller & McClintock, New York, N. Y.
Hardaway Contracting Co., Columbus, Ga.
Harrub Engr. Co., C. N., Nashville, Tenn.
Hills Co., George B., Jacksonville, Fis.
Howerton Engineering Co., Asheville, N. C.
Knowles, Inc., Morris, Pittsburg, Ps.
Ludlow Engineers, Winston-Salsem, N. C.
Meas & Mees, Charlotte, N. C.
Pennington, J. R., Carson City, New.
Piatt, William M. Durham, N. C.
Sandarnon & Porter, New York, N. T.
Spoon & Lewis, Greenaboro, N. C.
Tucker & Laxton, Charlotte, N. C.
White Co., Gilbert C., Durham, N. C.
White Engineering Corp., J. G., New
York
Vork.

Wiedeman & Singleton, Inc., Atlanta, Ga. Williamson, Les H., Charlottesville, Va.

Williamson, Les H., Charlosser.

— (Structural.)
Bartlett Engra., Inc., Terrell, San Antonio, Texas.
Freeland, Roberts & Co., Nashville, Tenn.
Hedrick, Inc., Ira G., Hot Springs Nat'l.
Fark, Ark.
Hills Company, Geo. B., Jacksonville, Fla.
Lockwood Greene Engra., Inc., New York
City.
Simmons, Inc. & Associates, B. Stanley,
Washington, D. C.
Turner, C. A. P., Minneapolis, Minn.
Virginia Bridge & Iron Co., Roanoke, Va.

-(Textile Mills.) kwood Greene, Engrs., Inc., New York City.

Main, Inc., Chas. T., Boston, Mass.
Sirrine & Co., J. E., Greenville, S. C

——(Transmission Lines.) Hoosier Engineering Co., Chicago, Ill. Biggs Eng. Co., W. E., Knoxville, Team. Wiley & Wilson, Lynchburg, Va.

—(Water Supply.) Floyd & Lochridge, Dallas, Texas. Pennington, J. R., Carson City, Nev.

ENGINES (Compressed Air.)
Dake Engine Co., Grand Haven, Mich

——(Diesel Type.) Fairbanks, Morse & Co., Chicago, Ill.

—(Gas and Gasoline.)
Light Mrg. & Fdry. Co., Pottstown, Pa.
Novo Engine Co., Lansing, Mich.
Sterling Engine Co., Buffalo, N. Y.
Wisconsin Motors Co., Milwaukae, Wis. —(Gas and Oil.) Chicago Pneumatic Tool Co., New York.

——(Hoisting.) Clyde Iron Works Sales Co., Duluth, Minn.

——(Marine.) Fairbanks, Morse & Co., Chicago, Ill.

——(Oil.)
Ingersoil-Rand Co., New York, N. Y.
Continental Gin Co., Birmingham, Als.

——(Steam.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Cole Mfg. Co., R. D., Newnan, Gs.
Leffel & Co., The James. Springfield, O.
Lombard Iron Works & Supply Co., Augusts, Gs.
Morris Machine Works, Baldwinsville,
N. Y.
Schoffeld's Sons Co., J. S., Macon, Ga.

ENVELOPES. Young & Seldon Co., Baltimore, Md.

ESTIMATORS (Building & Construction.)
Spring, Charles Herbert, Greensbore, N. C.

EXCAVATING MACHINERY.
Bay City Shorels, Inc., Bay City, Mich.
Buckoye Traction Ditcher Co., Findley, O.
Bucyrus-Eric Co., Eris, Penns.
Clyde Iron Works Sales Co., Duluth,
Minn.
Harnischfeger Corp., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland.
Monighan Mg. Corp., Chicago, Ill.
National Equipment Corp. (Kochring,
Insley, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Owen Bucket Co., The, Cleveland, Ohio.
Thew Shovel Co., The, Clorain, Ohio.
Universol Power Shovel Co., Milwaukee,
Wis.

EXCAVATORS (Clamshell and

Orange Peel.) Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. Thew Shovel Co., Lorain, Ohio. (Dragline. See Dragline Br-

-(Trench.) ——(Trench.)
Barber-Greene Co., Aurora, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Buckeye Traction Ditcher Co., Findlay, O.
Bucyrus-Erie Co., Erie, Penna.
Harnischeger Corp., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Monighan Mfg. Corp., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohis.
Universal Power Shovel Co., Milwaukee,
Wis.

EXHAUST FANS (See Blewers and Exhaust Fans.) Systems (See Blowers and Exhaust Fans.)

EXPANSION Joints (Read and Street.)
Servicined Premoulded Products, Ina.,
Chicago, Ill.

EXPLOSIVES.

Du Pont de Nemours & Ce., Inc., B. I.,
Wilmington, Del.
Hercules Powder Ce., Inc., Wilmington,

FACTORY Management Systems. Ernst & Ernst, New York, N. Y.

FANS, Exhaust (See Blowers and Exhaust Fans.)

FEED-WATER HEATERS and Purifiers.
American Water Softener Co., Phila., Pa.

FELT (Building Sheathing.) Barrett Co., The, New York, N. Y.

FENCE POSTS (Creosoted.)

FENCING Entrance Gates (Iron, Steel and Wire.) American Steel and Wire Co., Balto., M4. Anchor Post Fence Co., Baltimore, M4. Page Fence Association, Chicago, Ill. Stewart Iron Works Co., Cincinnati, O. (Field and Industrial, Wire

Woven.)
American Steel and Wire Co., Balto., Md.
Anchor Post Fence Co., Baltimore, Md.
Guif States Steel Co., Birmingham, Ala.
Page Fence Association, Chicago, Ill.
Stewart Iron Works Co., Cincinnati, 6.

FERTILIZER MACHINERY.

FILTER (For Domestic and Industrial Purposes.) American Water Softener Co., Phila., Pa. International Filter Co., Chicago, Ill. Rees. S. P., Alanta. Roberts Filter Mig. Co., Darby (Phila.), Pa. Scatfe & Sons Co., Wm. B., Oakment, Pa.

ranancing.
Akers, William, Atlanta, Ga.
Electric Bond & Share Co., New York.
Equitable Trust Co., New York City.
Garraway & Co., S. G., Chleago.
Gay & Co., W. O., New York, N. Y.
Marx & Co., Birmingham, Ala. FINANCING.

FIRE CLAY.
Alabama Clay Products Co., Birmingbam.
Cambria Clay Products Co., Blackfork, O.

FIRE EXTINGUISHERS.

Myers & Bro. Co., The F. E., Ashland, O.

FIREPROOF Building Material.
Bannon Pipe Co., Louisville, Ky.
Robertson Co., H. H. Pittsburgh. —Doors and Shutters.

Kinnear Mfg. Co., The, Columbus, Ohie.
Mahon Co., R. C., Detroit, Mich.
Moeschi-Edwards Corr. Co., Cincinnati, O.
Richards-Wilcox Mfg. Co., Aurora, Ill.

FIREPROOFING MATERIAL and Construction.
Peelle Co., The, Brooklyn, N. T

FITTINGS (Wire Rope.) Leschen & Sons Rope Co., A., St. Leuis.

FLANGES (Iron and Steel.)
Amer. Cast Iron Pipe Co., Birmingham.
Dart Mfg. Co., E. M., Providence, R. I.

National Cast Iron Pipe Co., Birmingham, Ala.
Taylor Forge & Pipe Wks., Chicage, Ili.
U. S., Pipe & Feundry Co., Burlington,
N. J.
Vegt Meh Ca., Henry, Louisville, Ky.
—and Flanged Fittings.
Grinnell Co., Inc., Providence, R. I.

FLOOR (Asphalt Mastic.)
Barber Asphalt Co.. Philadelphia, Pa.

—(Asphalt Plank.)
Berricised Premoulded Products, Inc.,
Chicago, Ill.
——(Composition.)
Johns-Manville Corp., New York, N. Y.

——(Cork Composition.)
Cengoleum-Nairn, Inc., Ksarny, N. J.
——(Hardwood, Maple, Onk.)
Nashville Hardwood Flooring Co., Nashville Tenn.

— (Northern Hard Maple.)

Heit Hardwood Co., Oconto, Wis.

— (Open Steel.)

Blaw-Knox Co., Pittaburgh, Pa.

Irving Iron Works Co., Long Is. City, N. T.

Kerlew Stael Flooring Co., Jersey City,
N. J.

— (Rubber and Cork.)
Cengoleum-Nairn, Inc., Kearny, N. J.
—Anchors.
Bull Dog Floor Clip Co., Winterset, Iewa.
—Covering.
Cengoleum-Nairn, Inc., Kearny, N. J.

— Hardener (Concrete.)

Ronneborn Sons.. Inc., L., New York.

**Stonhard Co., Phila., Pa.*

— Plates and Stair Treads.*

**American Pressed Steel Co., Phila., Pa.*

Central Iron & Steel Co., Harrisburg.

**Pa.*

**Ryerson & Son., Inc., Jos. T., St. Leuis and New York.*

—Steel (For Concrete Culverts, Roads, Streets.)
Blaw-Knox Co., Pitisburgh, Pa.
—Wax.
Cengoleum-Nairn, Inc., Kearny, N. J.
—(Wood) Preservative.
Stophard Co., Phila., Pa.

FLUSH-TANK SIPHONS. Kaustine Ce., Inc., Perry, N. T. Pacific Flush-Tank Co., New York, N. Y.

FLYER PRESSERS.
Southern Spindle & Flyer Co., Charlette,
N. C.

FLYERS. Southern Spindle & Flyer Ca., Charlette, N. C.

FORGINGS (Drop.)
Vegt Mch. Co., Henry, Louisville, Ky.

FORMS, Steel (For Concrete, Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.) Blaw-Enex Co., Pittsburgh, Pa.

FOUNDATION MASONRY. Calligan Co., A. H., Richmond, Va.

FOUNDRIES and Machine Shops.

Deemer Steel Casting Co., New Castle, Del.

General Machine Works, York, Pa.

Glamorgan Pipe & Fdry. Co., Lynchburg, Vs.

Geldens' Fdry. & Mch. Co., Columbus, Ga.

Lombard Iron Works & Supply Co., Augusta, Ga.

Moccasin Bushing Co., Chattanooga, Tenn.

FOUNDRY Equipment and Supplies.
Chain Belt Ca., Milwaukee, Wis.
Hill & Griffith Ca., The. Cincinnati, O.
Whiting Corp., Harvey, Hi.
—Facings
stone.)
Hill & Griffith Co., The, Cincinnati, O.

FUMIGATORS (Fruit, Nuts, Nursery Stock, etc.) Union Tank & Pipe Co., Los Angeles, Cal.

FURNACES (Industrial.)
Combustion Engr., Corp., New York City.
—(Water-Cooled.)
Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Ps.

GALVANIZED Products.

Birmingham Galvanizing Co., Birmingham, Ala.

Cattle & Bros., Jos. P., Philadelphia, Pa.

—Steel and Iron.

American Rolling Mill Co., Middletown, O.

National Cast Iron Pipe Co., Birmingham, Ala.

Tayler Forge & Pipe Wks., Chicago, Ili.
U. S. Pipe & Foundry Co., Burlington.

Republic Steel Corp., Youngstown, Ohio.

GALVANIZING (Cadmium Plating.)
Birmingham Galvanizing Co., Birmingham, Ala.

——(Hot Dip.)

Bessemer Galvanizing Works, Birmingham.

Birmingham Galvanizing Co., Birmingham, Ala.

Cattle & Bros., Jos. P., Philadelphia, Pa.

Newport News, Shipbuilding & Drydock
Co., Newport News, Va.

GARAGES (Metal.) Maryland Metal Building Co., Balto., Md.

GARBAGE DISPOSAL SYSTEMS Sealcell Corp., New York, N. Y.

GAS HOLDERS.
Chicago Bridge & Iron Works, Atlanta, Ga.
——Producers.
Gas-O-Flame Stove Works, Port Deposit,
Md.

Mongan Construction Co., Worcester, Mass. Wood & Co., R. D., Philadelphia, Pa.

GASOLINE and KEROSENE.

GASOLINE SHOVELS (See Shovels.)

GATES (Automatic Drainage.)
Armee Culvert Mfrs. Asso., Middletown, O.
Diric Culvert & Metal Co., Atlanta, Ga.
Diris Culvert Mfg. Co., Little Rock, Ark.
Louisians Corr. Culvert Co., Baton Rouge.
La.
Tenn. Metal Culvert Co., Nashville, Tenn.
Western Metal Mfg. Co., Houston, Texas.

GAUGE GLASSES.
Jenkins Bres., New York, N. Y.

GEARS.
DeLaval Steam Turbine Co., Trenten, N. J.
Earle Gear & Machine Co., Philla., Pa.
Foote Bros. Gear & Meh Co., Chicago.
General Electric Co., Schenectady, N. Y.
—Cut.
Ohio Gear Co., Cleveland, Ohio.
—(Worm Reduction.)
DeLaval Steam Turbine Co., Trenton, N. J.
Foote Bros. Gear and Meh. Co., Chicago.

GENERATORS, MOTORS (New.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Howell Electric Motors Co., Howell, Mich.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

burgh, Pa.

—(Used.)
Belyes Co., Inc., New York City.
Electrical Equip. Co., Raieigh, N. C.
Gregory Electric Co., Chicago.
Nashville Ind. Corp., Old Hickory, Tenn.
Nussbaum & Co., V. M., Ft. Wayne, Ind.
O'Brien Machinery Co., Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.
Stewart Elec. Co., John A., Cincinnati,

GEOLOGISTS. (See Engineers, Geological.)

GLASS (Art.)
Binswanger & Co., Memphis, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.
—(Plate.)
Binswanger & Co., Inc., Memphis, Tenn.
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.
—(Window.)
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Corp., Philadelphia, Pa.

(Wire.)
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Phila., Pa.

GRADERS (Elevating.)
Adams Co., J. D., Indianapolis, Ind.
Caterpillar Tractor Co., San Leandro,
Calif.

Calif.

—(Leaning Wheel Road.)
Adams Co., J. D., Indianapolis, Ind.
—(One Man Motor.)
Adams Co., J. D., Indianapolis, Ind.
Riddell Co., W. A., Bucyrus, Ohio.

GRAPHITE.
Dixon Crucible Co., Jos., Jersey City,
N. J.

GRATES and Grate Bars. Schofield's Sons Co.. J. S., Macon, Gs. Vogt Machine Co., Henry, Louisville, Ky. GRATING (Area, Flooring, Sidewalk.)
Slaw-Knox Co., Pittsburgh, Pa.
Hendrick Mfg. Co., Carbondale, Pa.
Irving Iron Works, Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

GRAVEL (Roofing and Read.)
American Limestone Co., Knoxville, Tenn.
Arundel Corp., The. Baltimore, Md.
Boxley & Co., W. W., Roanoke, Va.
Friend & Co., Inc., Petersburg, Va.

GREASE Cups.
Lunkenheimer Co., The, Cincinnati, O.

GRILLES (Brass, Bronze, Steel, etc.)
Manhattan Perforated Metal Cs., Inc.,
Long Island City, N. Y.

GRINDERS (Cylinder.)
Hutto Engineering Co., Detroit, Mich.

—(Electric.)
Chicago Pneumatic Tool Co., New York.
—(Gypsum, Limestone, etc.)
Raymond Bros. Impact Pulv. Co., Chicago.

GRINDING MACHINERY (Flexible Saft.)
Hutto Engineering Co., Detroit, Mich.
Strand & Co., N. A., Chicago, Ill.
—Wheels.
Carborundum Co., Niagara Palls, N. Y.

GUARD RAIL (Road.)
National Traffic Guard Co., Atlanta.

GUNITE CONSTRUCTION.
Cement-Gun Ce., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicage.
Gunite Conc. & Constr. Ce., Kanas City.
Gunite Constr. Co., New York City.
Rust Engineering Co., Birmingham, Ais.

GUNPOWDER.
Du Pont de Nemours & Ca., Inc., E. I.,
Wilmington, Del.
Hercules Powder Ca., Inc., Wilmington,
Del.

GUNS (Hydraulic.) Georgia Iron Works, Augusta, Ga.

HANGARS (Airplane.)
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulia, Okla.
Maryland Metal Bidg. Co., Balto., Md.

HANGERS (Door, All Kinds.)
Richards-Wilcor Mfg. Co., Aurora, Ill.
——(Line Shaft.)
American Pulley Co., Philadelphia, Pa.
Wood's Sons Co., T. B., Chambersburg,
Pa.

HARBOR IMPROVEMENTS.
Arundel Corp., Baltimore, Md.
Alantie, Guif & Pacific Co., New York.

HARDWARE (Door.)
Bichards-Wilcox Mfg. Co., Aurers, Ill.

HEATERS (Asphalt.)
Honhorst Co., Jos., Cincinnati, O.

HEATING Apparatus (Engineers and Contractors.)
Grinnell Co., Inc., Providence, R. I. Skinner Bros. Mfg. Co., St. Louis, Me.
——Systems.
Clarage Fan Co., Kalamazoo, Mich.
Skinner Bros. Mfg. Co., St. Louis, Me.

HOISTING MACHINERY.
Clyde Iron Works Sales Co., Duluth,
Minn.

HOISTS (Air Portable.)
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.
—(Chain.)
Harrington Co., The, Philadelphia, Pa.
—(Electric.)
Clyde Iron Works Sales Co., Duluth,
Minn.
Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp.,
Milwaukee, Wis.
Mundy Hoisting Engine Co., J. 8.
Newark, N. J.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Machy. Co., Columbia,
Pa.
Street Bros. Meh. Wks., Chattanooga,
Tenn.

Gasoline.)
Clyde Iron Works Sales Ca., Duluth,
Ming.

Dake Engine Co., Grand Haven, Mich.
Mundy Hoisting Engine Co., J. S.,
Newark, N. J.
National Equipment Corp. (C. H. & E.
Division), Milwaukes, Wis.
Nore Engine Co., Leansing, Mich.
O. K. Clutch & Machy, Co., Columbia, Ps.
Street Bros. Mch. Wks., Chattanoga, Tena.

— (Hand Power.)
O. K. Clutch & Machy. Co., Columbia, Pa.
— (Steam.)
Clyde Iron Works Sales Ca., Buinth,
Mins.
Dake Engine Co., Grand Haven, Mich.
Mundy Holsting Engine Ce., J. S.,
Newark, N. J.
Street Bros. Meh. Wks., Chattanoogs, Tenn.

HOOPS, Bands, etc. (Galvanized.) Conners Steel Co., Birmingham, Als.

HOPPERS (Aggregate, Measuring and Weighing.)
Blaw-Knor Co., Pittsburgh, Pa.
Butler Bin Co., Waukesha, Wis.

HOSE (Rubber.) Republic Rubber Co., Youngstewn, Ohio.

HOTELS, Helsa Hotel Systems, St. Louis, Mo. Murphy's Hotel, Richmond, Vs. Rice Hotel, Houston, Texas. Southern Hotel, The, Baltimere, Md.

HOUSE MOVING. Eichleay, Jr. Co., John, Pittsburgh.

HULLS (Steel.)

American Steel Dredge Co., Fort Wayne.

Ind.

HUMIDIFYING AND DRYING EQUIPMENT. Grinnell Co., Inc., Providence, B. I. Skinner Bros. Mfg. Co., St. Louis, Ms.

HYDRANTS (Fire.)
Columbian Iron Works, Chattaneoga, Tena.
Ludlow Valve Mfg. Co., The. Troy, N. T.
Myers & Bro. Co., The. F. E., Ashland, O.
Vogt Brothers Mfg. Co., Louisville, My.
Wood & Co., R. D., Philadelphia, Pa.

HYDRO - ELECTRIC POWER COMPANIES (Offering Industrial and Commercial Opportunities.) Alabams Power Co., Birmingham, Ala. Central Power & Light Co., San Asiesle. Georgia Power Co., Atlants, Ga. Texas Power & Light Co., Dallas, Texas.

ICE and Refrigerating Machinery and Supplies. Ingersoll-Rand Co., New York, N. Y. Vogt Mch. Co., Henry, Louisville, Ky.

INCINERATORS.
Dunler Hanger Co., Cleveland, Ohio.

INCORPORATORS,
Corporation Service Co., Wilmington, Del.
Delaware Registration Trust Co., Wilmington, Del.

INDUSTRIAL SURVEYS.
MacElwee & Crandall, Inc., Cambridge,
Mass.
Technical Service Co., New York, N. I.

INJECTORS.
Jenkins Bros., New York, N. T.
Randle Machinery Co., The, Cineinnati, O.

INSULATING MATERIALS.
General Electric Co., Schenoctady, N. Y.
Johns-Manville Corp., New York, N. Y.
Okonite Co., New York, N. Y.

INVESTMENT SECURITIES.
Electric Bond & Share Co., New York.
Gay & Co., W. O., New York City.
Hanchest Bond Co., Inc., The. Chieage, Ill.
Marx & Co., Birmingham, Ais.
Mercantile Trust Co., Baltimore, Md.
Nuveen & Co., John, Chicago.
Peabody & Co., Chicago.
Provident Savings Bank & Trust Co.,
Cincinnati. Ohio.
Robinson-Humphrey Co., Atlanta, Gs.
Seasongood & Mayer, Cincinnati, Ohio.
Taylor, Wilson & Co., Inc., Cincinnati. O

IRON.
Tennessee Coal, Iron & Railroad Co., Birmingham. Als.
——(Ingot, For Culverts, etc.)
American Rolling Mill Co., Middletown, O

JOINTS (Pipe.) Leadite Co., The, Philadelphia, Pa JOIST HANGERS.
Duplex Hanger Co., Cleveland, Ohio.

KETTLES (Pavers and Boofers.) Honborst Ca., Jos., Cincinnati, O.

ADDERS (Rolling.) lyers & Bro. Co., The F. E., Ashland, O.

——(Wooden.)
Dayton Safety Ladder Co., Cincinnati, O.
Patent Scaffelding Co., Chicago, Ill.

LAMPS (Incandescent.)
General Electric Vapor Lamp Co., Ho-AMIL'S (Allestric Vapor Lamp Co., Ho-boken, N. J. estern Electric Co., New York City.

LATH '(Metal.) Ingalis Iron Works Co., Birmingham, Ala.

LAWN FURNITURE (Wire.)
Dufur, Baggott & Ca., Baltimore, Md.

LIGHTING (Factory and Mill.) General Electric Vapor Lamp Co.. meral Electric Hoboken, N. J.

-Fixtures (Electric.) tern Electric Co., New York City.

LININGS (Flue, Fire Clay.)
Les Clay Products Co., Clearfield, Ky.
Owensbors Sewer Pipe Co., Owensbor
Ky.

---(Tube Mill.)
Fuller Lehigh Co., Fullerton, Pa.

LINOLEUM (Battleship, Jaspe.) Congoleum-Nairn, Inc., Kearny, N. J.

LITHOGRAPHERS and EN-GRAVERS. Smith & Son Co., Oscar T., Baltimore, Md. Young & Selden Co., Baltimore, Md.

LOADING and UNLOADING MACHINERY (Portable.) Barber-Greene Co., Aurora, Ill. Northwest Engineering Co., Chiengo, Ill.

LOCOMOTIVES (Compressed Porter Co., H. K., Pittsburgh, Pa.

-(Electric.)
cinnati Car Corp. (Locometive Div.),
Cincinnati, Ohio.

-(Fireless Stored Steam.) er Ca., H. K., Pittsburgh, Pa.

——(Gasoline.)
Cincinnati Car Cerp. (Lecometive Div.),
Cincinnati, Ohle.
Porier Ce., H. K., Pittsburgh, Pa.
Whiteomb Ce., Gao. D., Rochelle, Ill.

——(Indastrial.)

Birmingham Rail & Lecometive Ce., Birmingham, Ala.
Cincinnati Car Corp. (Lecomotive Div.),
Cincinnati, Ohto.
Perter Ce., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Ce., Atlanta.
Whiteemb Co., Geo. D., Rochelle, Ill.

——(Mining.)
Cineinnati Car Cerp. (Lecomotive Div.),
Cincinnati, Ohio.
Porter Ce., H. K., Pittsburgh, Pa.
Whitcomb Ca., Geo. D., Boehelle, Ill.

Cochrige Co., Milwaukee, Wis.

—(Railway.)
Cineinnati Car Cerp. (Lecemotive Div.),
Cineinnati, Ohie.
Perter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta.
Whitcomb Co., Geo. D., Bochelle, Ill.

LOGGING MACHINERY. Clyde Iron Works Sales Co., Duluth, Mins.

LOOM PICK COUNTER

LUBRICANTS.
Dixon Crucible Co., Jos., Jersey City, M. J.
Guif Refining Co., Pittsburgh, Pa.

LUBRICATORS, (Force Feed.)
Lunkenheimer Co., The, Cincinnati, O.

LUBRICATION SYSTEMS.

LUMBER (Ceiling, Flooring, Siding.)
Industrial Lumber Co., Elizabeth, La. -(Creosoted.) La. Amer. Creceeting Ca., Inc., Louisville, Ky. Ayer & Lord Tie Co., Inc., Chicago.

Delaware Wood Preserving Co., Phila. Tennessee Coal, Iron & Railroad Co., Sloss-Sheffield Steel & Iron Co., Birming-ham, Ala.

Guif States Creos. Co., Hattiesburg, Miss.

Foungstown Sheet & Tube Co., YoungsTennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

-(Heavy Construction, Pitch, Pine, etc.) istrial Lumber Ca., Elizabeth, La. Pi

-(Zinc Meta Arsenite Treated.)

MACHINERY (Special.)
Bliss Co., E. W., Brooklyn, N. Y.
Earle Gesr & Machine Co., Phila., Pa.
Fernholtz Machinery Co., St. Louis, Mo.
General Machine Works, York, Pa.
Whiting Corp., Harvey, Ill.

and Supplies (New and Used.)

Used.)
Beatty Machine & Mfg. Co., Hammend, Ind.
Ind.
Reverse Co., Inc., New York City.
Dempster Equip. Co., Knoxville, Tenn.
Electric Service Co., Cincinnati Ohio.
Electric Service Co., Cincinnati Ohio.
Marine Metal & Supply Co., New York.
Nashville Ind. Corp., Ol Hickory Text.
Nashville Ind. Corp., Ol Hickory Text.
Nashville Ind. Corp., Ol Hickory Law.
Pa.
Randle Machinery Co., The, Phila., Pa.
Randle Machinery Co., The, Cincinnati, C.
Byeron & Son., Inc., Jos. T., St. Leuis
and New York.
Eyfert's Sons, Inc., L. F., Phila., Pa.
Zeinicker Supply Co., W. A., St. Leuis.

MACHINE TENDERS (Steel.)
Angle Steel Stool Co., Plainwell, Mich.

—(Tools.)
Ryerson & Son, Inc., Jos. T., St. Leuis
and New York. -(Used.)

Delta Equipment Co., Philadelphia, Pa. O'Brien Machinery Co., Phila., Pa.

MAIL CHUTES. Cutler Mail Chute Co., Rochester, N. Y.

MARBLE (Producers and Manufacturers.) Georgia Marble Co., Tate, Ga.

MATERIAL ELEVATORS.
National Equipment Corp. (Insley, C. H. & E.), Milwaukee, Wis.

METAL-Cutting Machinery.
Atkins & Co., E. C., Indianapolis, Ind.
Earle Gear & Machine Co., Phila., Pa.

MILL MACHINERY and SUP-PLIES.
Lombard Iron Works & Supply Ca., Augusta, Ga.

MINING MACHINERY.
McLanshan-Stone Machine Co., Hellidays-burg, Pa.

MIXERS ational Equipment Corp. (Kochring, T. I. Smith, Kwik-Mix), Milwaukee. Wls.

---(Hot.)
Koehring Co., Milwaukee, Wis.

— (Pinater.)
Blystone Mfg. Ca., Cambridge Springs, Pa.
Chain Belt Co., Milwaukee, Wis.
Bunning & Boschert Press Co., Syraeuss,
N. Y.
Jaeger Machine Co., Celumbus, Ohio.

MORTAR MIXERS.
Chain Belt Co., Milwaukee, Wis.
Jaeger Machine Co., Columbus, Ohie.

Ingredient.
Louisville Cement Co., Louisville, Ky.

MOTORS (Electric.)
Pairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N. T.
Howell Electric Motors Co., Howell, Mich.
Western Electric Co., New York City.
Westinghouse Elec. & Mfg. Co., E. Pittshursh, P. burgh, Pa.

——(Gasoline.) Wisconsin Motor Co., Milwaukee, Wis.

MOTOR TRUCKS.
International Harvester Co., of America,
Inc., Chicago, Ill.

NAILS (Cut.)
Reading Iron Co., Reading, Pa.
——and Spikes.
American Steel & Wire Co., Balto., Md.
Gulf States Steel Co., Birmingham, Als

NATURAL GAS COMPANIES.
(Offering Industrial and Commercial Opportunities.)
Arkanas Natural Gas Corp., Shreveport,
La.

OIL (Fuel and Gas.)
Gulf Refining Co., Pittsburgh, Pa.

—Cups.
Lunkenheimer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY. Georgia Iron Works, Augusta, Ga. McLanahan Stone Machine Co., Hollidays-burg, Pa.

ORNAMENTAL BRONZE
WORK.
Heath Co., J. S., Waukegan, Ill.
——Iron Work.
Roanoke Iron & Bridge Wks., Roanoke, Roanoke Iron & Bridge Wks., Roanoke, Va.
Snead Architectural Iron Works, Louisville, Ky.
Routhern Regineering Co., Charlotte, N. C.
Stewart Iron Works Ce., Cincinnati, O.

PACKING (Asbestos, Metallic, Rubber, Leather, etc.) Jenkins Bros., New York, N. Y. Johns-Manville Corp., New York, N. Y. Republic Rubber Co., Youngstown, Ohio.

PAINT (Aluminum.)
Aluminum Co. of America, Pittsburgh, Ps. ——(Metal Surfaces.)
Aluminum Co. of America, Pittsburgh, Pa.
Dixon Crucible Co., Jos., Jersey City.
N. J.

— (Mill White, For Interior.)
Aluminum Co. of America, Pittsburgh, Ps.
Sonneborn Sons, Inc., L., New York. ——(Preservative.)
Cabot, Inc., Samuel, Boston, Mass.
Foster Co., Benjamin, Philadelphia, Pa.

PANELBOARDS.

PARTITIONS (Metal, Folding, Rolling.) Rinnear Mig. Co., The, Columbus, Ohie. Lupton's Sons Co., David, Phila., Pa. -(Sectionfold, Rolling, Woo

PATENT ATTORNEYS.
Buck, Sterling P., Washington, D. C.
Coleman, Wasten E., Washington, D. C.
Taton, Paul B., Charlotts, N. C.
Sannett, Edward C., Washington, D. C.
Saymour & Bright, Washington, D. C.

PATTERNS (Drawing, etc.)

PAVING Blocks (Creenated Wood.)
American Creenate Works. New Orleans.
—Blocks (Bubber.)
Servicised Premoulded Products, Inc.. — Mixers.
National Equipment Corp. (Koehring, T.
L. Smith), Milwaukee, Wis.
— Plant (Asphalt.)
Simplicity System Co., Chattaneoga, Tena.

PENSTOCKS.
Chicago Bridge & Iron Works, Atlanta.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Smith Co., S. Morgan, York, Pa.

PERFORATED METAI.
Chicago Perforating Co., Chicago, Ill.
Erdle Perforating Co., Rochester, N. Y.
Harrington & King Perf. Co., Chicago,
Hendrick Mfg. Co., Carbondale, Pa.
Manhattan Perforated Metal Co., Inc.,
Long Islaid City, N. Y.
Mundt & Sons. Charles, Jersey City. N. J.
Nortmann-Duffke Co., Milwaukee, Wis.

PETROLEUM REFINER

PHOSPHATE ACID.

Davison Chemical Co., Baltimore, Md. — (Machinery.)

McLanahan-Stone Machine Co., Hollidaysburgs. Des.

Barrett Co., The, New York, N. Y.

PILE SHOES.
Janney, Jr., Jos. A., Phila., Pa.

PILING (Creosoted.)
Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville.
Ayer & Lord Tile Co., Inc., Chicage.
Prettyman & Sons, J. F., Charleston, S. C.
Savannah Creosoting Co., Inc., Savannah
Wales Wood-Preserving Co., Norfolk, Va.

— (Steel Sheet.) Carnegie Steel Co., Pittsburgh, Pa. Wenlinger, Inc., New York, N. Y. Venlicker Supply Co., W. A., St. Leuis

PILLOW BLOCKS.
Goldens' Fdry. & Mch. Co., Columbus, Ga.

PIPE.
Albert & Davidson Pipe Corp., Brooklyn, N. Y.
Albert Pipe Sup. Co., Inc., Brooklyn, N. Y.
Birmingham Boiler & Engr. Co., Birmingham, Ala.
Central Pipe & Sup. Co., Charlesten.
W. Va.
Greenpoint Iron & Pipe Ca., Inc., Brooklyn, N. Y.
Hammond Iron Co., Birmingham, Ala.
Fludson Pipe & Sup. Co., Bayonne, N. J.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.
Smith Corp., A. O., Milwaukes, Wis.

— (Cast Iron.)
Amer. Cast Iron Pipe Co., Birmingham.
Cast Iron Pipe Research Assn., Chicage.
Central Foundry Co., The, New York, N. I.
Glamorgan Pipe & Pdry. Co., Lynchburg.
Va. Vs.
National Cast Iron Pipe Co., S.
National Cast Iron Pipe Co., Burlington.
U. S. Pipe & Foundry Co., Burlington.
N. J.

——(Dredge.) Abendroth & Root Mfg. Co., New York. ——(Hammer-Welded.) National Tube Co., Pittsburgh, Pa.

(Iron and Steel.)
Ryerson & Son, Inc., Jos. T., St. Louis,
and New York.

--- (Riveted.)
Abendroth & Root Mfg. Co., New York.

-(Second-Hand.) ert & Davidson Pipe Corp., Breeklyn. Albert Pipe Sup. Co., Inc., Brooklya.
N. Y.
Albert Pipe Sup. Co., Charleston. N. Y.
Central Pipe & Sup. Co., Charleston,
W. Va.
Greenpoint Iron & Pipe Co., Inc., Broeklyn, N. Y.
Hudson Pipe & Supply Co., Bayenne,
N. J.
Marine Metal & Supply Co., New York.

— (Spiral Riveted.)
Abendroth & Root Mfg. Co., New York.
Taylor Forge & Pipe Wks., Chicago, Ill.

Taylor Forge & Pipe Wks., Chicago, III.
——(Steel.)
Bethlehem Steel Co., Bethlehem, Pa.
National Tube Co., Pittsburgh, Pa.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Fiping Co., Pittsburgh, Pa.
Republic Steel Corp., Xoungstown, Ohio.
Smith Corp., A. O., Milwanse, Wis.
Youngstown Sheet & Tube Co., Youngstown,
Ohio.

--- (Wrought Iron.)
Reading Iron Ca., Reading, Pa. -Benders and Headers.
Grinnell Co., Inc., Previdence, R. 1. —Bending Machines.
American Pipe Bending Machine Co.,
Boston, Mss.

-Contings. er Co., Benjamin, Philadelphia, Pa —Fittings.
Amer. Cast Iron Pipe Co., Birmingham.
Georgia Iron Works, Augusta, Ga.
Grinnell Co., Inc., Previdence, B. I.
—Lines (Water, Gas & Oil—
Riveted or Welded.)
Biggs Boiler Works Co., Akron, Ohio,
Smith Corp., A. O., Milwaukes, Wis.
—Unions and Joints.

Smith Corp., A. O., Milwaukse, Wis.

— Unions and Joints.
Dart Mrg. Co., E. M., Previdence, R. I. Smith Corp., A. O., Milwaukse, Wis.

— Systems (Industrial.)
Grinnell Co., Inc., Providence, R. I.
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.
Power Piping Co., Pittsburgh, Pa.

PIG-IRON.
Hammond Iron Co., Birmingham, Ala.
Republic Steel Corp , Youngstown, Ohio.

PLANERS and Mortisers (Hand and Electric.)
Wappat, Incorporated, Pittsburgh, Pa.

PLATES (Steel.)
Bethlehem Steel Co., Bethlehem, Pa.
Carnegle Steel Co., Pittaburgh, Pa.
Central Iron & Steel Co., Harrisburg, Pa
Granite City Steel Co., Granite City, Ill.
Ryerson & Son, Inc., Jos. T., St. Louis
and New York.
Tennessee Coal, Iron & Bailroad Co., Birmingham.

PNEUMATIC TOOLS.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Band Co., New York, N. Y.

POLES (Creosoted.)
Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Ce., Inc., Chicago.
Brown Weod Preserving Co., Louisville,
Ky.

Brown Wood Preserving Co., Louisville, Ky. Prettyman & Sons, J. F., Charleston, S. C. Savannah Creosoting Co., Savannah, Ga. Taylor-Colquitt Co., Spartanburg, S. C. ——(Tubular, Steel.)
National Tube Co., Pittsburgh, Pa.
——(Zine Meta Arsenite Treated.)
Curtin-Howe Corp., New York City.

POLISHING MACHINERY.
(Wheels, Blocks.)
Carborundum Co., Niagara Falls, N. I.

PORTABLE HOUSES (Metal.) Braden Steel Corp., Tulsa, Okla. Maryland Metal Building Co., Balte., Md.

POST CAPS.
Duplex Hanger Co., Cleveland, Ohio.

POSTS (Cast Iron, Railway and Highway.)
U. S. Pipe & Foundry Co., Burlington,
N. J.

POWER TRANSMISSION MA-CHINERY.

American Pulley Co., Philadelphia, Pa.
Diamond Chain & Mig. Ca., Indianapolis.
Feote Bros., Gear & Machine Co., Chicago.
Golden's Fdry. & Moh. Co., Columbus, Ga.
Morse Chain Co., Ikhese, N. Y.
O'Brien Machinery Co., Phila., Pa.
Schofield's Sons Ca., J. S., Masem. Ga.
Weod's Sons Ca., T. B., Chambersburg. Pa — (Pumps.)
Luitwieler Pumping Engine Co., Rochester, N. Y.

PREHEATERS (Air.)
Combustion Engr. Corp., New York City

PRESSES, (Baling, Cottonseed Oil, Hydraulic and Power.) Dunning & Boschert Press Co., Inc., Syracuse, N. Y. Ripley Foundry & Machine Co., Ripley, O. — (Hydraulic Wheel.)
Inter-State Fdry. & Mach. Wks., Johnson
City, Tenn.
— (Metal Stamping.)
Bliss Co., E. W., Brooklyn, N. Y.

PRINTERS (Book, Catalog, Job.) Smith & Son Co., Oscar T., Baltimore Md. Toung & Selden Co., Baltimore, Md.

PRODUCER (Gas Machines.)
Gas-O-Flame Store Works, Port Deposit. Gas-O-Flame Stove viscos.
Md.
Margan Construction Co., Worcester, Mass.
Wood & Co., R. D., Phila., Pa.

PULLER-JACKS.
Edelblute Co., T. H., Pittsburgh, Pa.

PULLEYS (Friction Clutch.)
Caldwell Co.. Inc., W. E., Louisville, Kg.
Schultz & Son, A. L., Chicago, Ill.
Wood's Sons Co., T. B., Chambersburg, Pa. — (Motor and Machine.)

American Pulley Co., Philadelphia, Pa. -(Steel Split.) —Shafting and Hangers.
American Pulley Co., Phila., Pa.
Foote Bros. Gear & Mch. Co., Chicage.
Goldens' Fdry. & Mch. Co., Celumbus, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

PULVERIZED COAL EQUIP-MENT. Whiting Corp., Harvey, 111.

PULVERIZED FUEL EQUIP-MENT. Combustion Engr. Corp., New York City. Fuller Lehigh Co., Fullerton, Pa.

PULVERIZERS (See Crushing and Pulverizing Machinery.)

PUMPING MACHINERY. American Well Works, Aurora, Ill. American Well Works, Aurora, Ill. Cameron, A. S., Steam Pump Works (Ingersell-Rand Co.), New York City. Chain Belt Co., Milwaukee, Wis.
Cook, Inc., A. D., Lawrenceburg, Ind.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersell-Band Co. (A. S. Cameron, Steam
Pump Works), New York, N. Y.
Keystone Pump & Brill Co., Beaver Falls,
Pa
Luitwieler Pumping Engine Co., Rochester, N. Y.
Myers & Bro. Co., The F. E., Ashiand,
Ohio. Ohio.

National Equipment Corp. (C. H. & E. Division). Milwaultee, Wis. Platt Iron Works, Dayton, Ohio. Viking Punp Co., Cedar Falls, Iowa. Virginia Mchy. & Well Co., Richmond, Va.

PUMPS (Air.) Manistee Iron Works Co., Manistee, Mich. — (Air Lift.)
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill. Sullivan Machinery Ce., Chicago, Ili.
—(Boiler Feed.)
Allis-Chalmers Mfg. Ce., Milwaukee, Wis.
Cameron, A. S., Steam Pump Works
(Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Eris Pump & Engine Wks., Medina, N. Y.
Ingersoll-Rand Co. (A. S. Cameron Steam
Pump Works), New York, N. Y.
Manistee Iron Works Co., Manistee, Mich.
Myers & Bro. Co., The F. E., Ashland, O. Myers & Bro. Co., The F. E., Ashland, O.

—(Centrifugal.)
Allis-Chalmers Mfg. Ce., Milwaukee, Wis.
American Well Works, Aurors, Ill.
Cameron, A. S., Steam Pump Works
(Ingersoll-Rand Co.), New York City.
DeLaval Steam Turbine Co., Trenton, N. J.
Emerson Pump & Valve Co., Alexandris,
Va.
Erie Pump & Engine Wks., Medina, N. Y.
Fairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam
Pump Works), New York, N. Y.
Jaeger Machine Co., Columbus, Ohle.
Layne & Bowler, Inc., Memphis, Tenn
Manistee Iron Works Co., Manlatee, Mich.
Morris Machine Wks., Baldwinsville, N. Y.
Novo Engine Co., Lansing, Mich.

—(Contractors.)

-(Contractors.)
reon Pump & Valve Co., Alexandria, Va. Erie Pump & Engine Wks., Medina, N. T. Nove Engine Co., Lansing, Mich.

Nove Engine Co., Lansing, Marcia.

— (Deep Well.)
American Well Works, Aurora, Ill.
Cook, Inc., A. D., Lawrenceburg, Ind.
Reystone Pump and Drill Co., Bearer
Falls, Pa.
Layne & Bowler, Inc., Memphis, Tenn
Luitwieler Pumping Engine Co., Rochester, N. Y.
Novo Engine Co., Lansing, Mich.

— (Diaphragm.)
Nove Engine Co., Lansing, Mich. ——(Hydraulic.)
Dunning & Boschert Press Co., Inc.,
Syracuse, N. Y.

— (Power.)
American Well Werks, Aurora, Ill.
Platt Iron Works, Dayton, Ohio.
Sterling Engine Co., Buffalo, N. Y.
— (Pulverized Coal.)
Fuller Lehigh Co., Fullerton, Ps. --- (Rotary.) Viking Pump Co., Cedar Falls, Iowa. —(Sand and Dredging.) Ellicott Machine Corp., Baltimors, Md. Erie Pump & Engine Wks., Medina, N. Y. Georgia Iron Works, Augusta, Ga.

——(Steam.) Cameron, A. S., Steam Pump Works (Ingersoll-Band Co.), New York City. Emerson Pump & Valve Co., Alexandria, Emerson Funn & varve co.,
Va.
Pairbanks, Morse & Co., Chicago, Ill.
Ingersoll-Rand Co. (A. S. Cameron Steam
Works), New York, N. Y.
Platt Iron Works, Dayton, Ohie.

— (Vacuum.)

Allis-Chaimers Mfg. Co., Milwaukee, Wis.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. X.
Suilivan Machinery Co., Chicago, Ill. —(Water Works.)
merican Well Works, Aurora, Ill.
ayne & Bowler, Inc., Memphis. Tenn.
lanistee Iron Works Co., Manistee, Mich.

PUNCHING and SHEARING MACHINERY. Beatty Machine & Mfg. Co., Hamme Ind. Bliss Co., E. W., Brooklyn, N. Y. Whitney Metal Tool Co., Bockford, Ill.

BACK BAKES. Newport News Shipbuilding & Drydeck Co., Newport News, Va.

RADIATOR ENCLOSURES.

Manhattan Perforated Metal Co., Inc.,

Long Island City, N. Y.

RAILINGS (Iron Pipe.)
Pipe Railing Constr. Co., Long Island
City, N. Y. and Grilles, Iron and Brass, (Banks and Offices.) Dufur, Baggott & Co., Baltimore, Md. Ludlew Saylor Wire Co., The St. Louis, Mg.

RAILBOAD Equipment and Supplies (New.)
Robinson & Orr. Pittsburgh, Pa.
Whiting Corp., Harvey, Ill.
—Equipment and Supplies

— Equipment and Supplies
(Used.)
Birmingham Rall & Loce. Co., Birmingham.
Equip. Sales & Rentals Co., Pittsburgh.
Levis & Co., Henry, Philadelphia, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron and Equip. Co., Atlanta.
Zeinicker Supply Co., W. A., St. Louis. — (Frogs and Switches.)
Bethlehem Steel Co., Bethlehem, Pa.
Frank, M. K., Pittsburgh, Pa.
Koppel Ind. Car & Equip. Co., Koppel,
Pa.

inson & Orr, Pittsburgh, Pa.

RAILROADS — (Offering Industrial, Agricultural and Commercial Opportunities.)
Atlanta and West Point R. R., Atlanta.
Central of Georgia Rwy., Savannah, Ga.
Missouri - Kansas - Texas Lines, Dallas,
Texas.
Missouri-Pacific Lines, St. Louis, Mo.
Model Land Company, Flagler System,
St. Augustine, Fla.
Norfolk & Western Railway, Roancke, Va.
Tennessee Central Railway, Nashville,
Tenn.

RAILS (New and Used.)

Birmingham Rail & Loomotire Ce., Birmingham, Ala.

Carnegie Steel Co., Pittsburgh, Pa.

Frank, M. K., Pittsburgh, Pa.

Levis & Co., Henry, Philadelphia, Pa.

Perry, Buxton, Doane Co., Philadelphia, Pa.

Robinson & Orr, Pittsburgh, Pa.

Smith & Co., W. M., Birmingham, Ala.

Southern Iron & Equip. Co., Atlanta, Ga.

Sweet's Steel Co., Williamsport, Pa.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Weller & Co., Birmingham, Ala.

Zelnicker Supply Co., W. A., St. Louis.

REFRACTORIES. Harbison-Walker Refractories Co., Pittsburgh. Taylor Sons Co., Charles, Cincinnati.

REFRIGERATING Machinery (See Ice and Refrigerating Ma-chinery and Supplies.)

REINFORCING for Concrete.
American Steel and Wire Co., Balto, Md.
Carnegie Steel Co., Pittsburgh, Pa.
Connors Steel Co., Birminghem, Als.
Dietrich Brothers, Baltimore Michael
Gulf States Steel Co., Birmingdem, Als.
Knovyille Iron Co., Romen Tenn.
Pidgeon-Thomas Iron Co., Memphis, Tenn.
Ryerson & Son. Inc., Jos. T., St. Louis
and New York.
Southern Engineering Co., Charlette, N. C. othern Engineering Co., Charlette, N. C.

RESURFACING MATERIALS (Floor, Roof and Roadways.) Stonhard Co., Phila., Pá.

RETORTS (Special Process Riveted or Welded.) Biggs Boiler Works, Akron, Ohio.

RIVER & HARBOR IMPROVE-MENTS, (Dredging, Docks, Wharves, etc.) Arundel Corp., The, Baltimors, Md. Atlantic Gulf and Pacific Co., New York. Kansas City Bridge Co., Kansas City.

RIVETS.
Russell, Burdsall & Ward Bolt & Nut
Co., Port Chester, N. Y.

ROAD and Street Machinery.

Acme Road Mehry. Co., Frankfort, N. Y.

Adams Co., J. D., Indianapolis, Ind.

Austin-Western Boad Mehry. Co., Chicage.

Blaw-Knox Co., Pittsburgh. Pa.

Buffalo-Springfield Roller Co., Spring
field. O.

Caterpillar Tractor Co., San Leandre, Cal.

Erie Machine Shops, Erie, Pa.

Huber Mig. Co., The. Marion, Ohie.

Universal Crane Co., Lorain, Ohie.

and Street Material.
Bituminous Earth Road Corp., Raleigh,
N. C.
Boxley & Co., W. W., Boanoke, Va.,
Interstate Amiesite Co., Wilmington, Del.
Kentucky Rock Asphalt Co., Louisville,

Kentucky Rock Asphalt Ca., Louisvilla, ky.,
Sloss-Sheffield Steel and Iron Ce., Birmingham, Ala.
Truscon Steel Co., Youngstown, O.
Weodstock Slag Corp., Birmingham, Ala.
—Graders and Scrapers.
Acme Road Mehry, Co., Frankfort, N. Y.
Adams Co., J. D., Indianapolis, Ind.
Austin-Western Road Mehry, Co., Chicaga,
Caterpillar Tractor Co., San Leandre, Cal.
—Olle and Procesynthyse. —Oils and Preservatives.
Gulf Refining Co., Pittsburgh, Pa. -Reinforcement (Welded

Fabric.) American Steel & Wire Co., Balto., Md. American Steel & Wife Co., Ballo., Md.

—Rollers (Steam and Gasoline.)

Acme Road Mehry. Co., Frankfort, N. Y.

Austin-Western Road Mehry. Co., Chicago.

Burfaio-Springfield Roller Co., Springfield, O.

Eric Machine Shope, Eric. Pa.

Huber Mfg. Co., The, Marion, Ohie.

——Scarifiers.
Austin-Western Road Mchry. Co., Chicage
Buffalo-Springfield Roller Co., Spring-field, O.

RAILS (New and Used.)
Birmingham Rail & Locomotive Ce., Birmingham, Als.
Carnegie Steel Co., Pittsburgh, Pa.
Frank, M. K., Pittsburgh, Pa.
Levis & Co., Henry, Philadelphia, Pa.
Smith & Co., W. M., Birmingham, Ala.
Southern Iron & Equip. Co., Atlants, Ga.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Zelnicker Supply Co., W. A., St. Leuis.
Weller & Co., Birmingham, Ala.
Zelnicker Supply Co., W. A., St. Leuis.
Koppel Ind. Car. & Equip. Ca., Koppel, Pa.
——(Marine.)
Charleston Dry Dock and Machine Cs., Charleston, S. C.

RECEPTACLES (Self-Closing, Waste Paper.)
Whitaker Paper Co., Baltimore, Md.

REELS and SPOOLS. (Pressed Metal.)
American Pulley Co., Philadelphia, Pa.

REFRACTORIES.

-Tiles. r. Cement Tile Mfg. Co., Pittsburgh.

ROPE (Manila, Sisal, Hemp, etc.) Broderick & Bascom Rope Co., St. Leuis. —Drives. Wood's Sons Co., T. B., Chambersburg, Pa.

RULES (Steel.) Lufkin Rule Co., Saginaw, Mich.

SAND.
Arundel Corp., Baltimere, Md.
Friend & Co., Inc., Petersburg, Va.

SANITARY Drinking Fountains. Rundle-Spence Mfg. Co., Milwaukee, Wis. Taylor Co., Halsey W., Warren, Ohio.

SASH (Industrial.)
Detroit Steel Products Co., Detroit, Mich.
Truscon Steel Co., Youngstown, O.
—(Operating Devises.)
Detroit Steel Products Co., Detroit, Mich. — (Steel.)
Detroit Steel Products Co., Detroit, Mich.
— (Steel, Basement, Ventilating.)
Detroit Steel Products Co., Detroit, Mich.

SAWMILL Machinery. Schoffeld's Sons Co., J. S., Macon, Ga.

SAW RIGS.
National Equipment Corp. (C. H. & E. Division). Milwaukee, Wis.

Atkins & Co., Inc., B. C., Indianapolis.
——(Cold Metal.)
Earle Gear and Machine Co., Phila., Pa. ——(Hack.)
Atkins & Co., Inc., E. C., Indianapolis.
——(Portable, Electric, Hand.)
Wappat, Incorporated, Pittsburgh, Pa.

SCAFFOLDING (Wooden.)
Patent Scaffolding Co., Chicago, Ill.

SCALES (Industrial, Platform.) American Kron Scale Co., New York

-(Textile.) rican Kron Scale Co., New York

SCHOOLS (Correspondence.)
International Correspondence Set ternational Scranton, Pa.

SCOOPS (Hand.) American Mfg. Co., Chattanooga, Tenn. -Wheeled. dell Co., W. A., Bueyrus, Ohio.

SCRAPERS (Drag and Wheel.)
Adams Co., J. D., Indiapapolis, Ind.
Austin-Western Boad Mehry. Co., Chicago.
Sauerman Bros., Chicago. III.

SCRAP IRON AND STEEL. Hunts Sens, M. J., Philadelphia, Pa. Perry, Buxton, Doane Co., Philadelphia. Smith & Co., W. M., Birmingham, Ala.

SCREENING (For Concrete and Road Construction.) American Limestone Co., Knexville, Tenn.

SCREENS (Sand, Gravel, Stone, COAL, Ore, etc.)

Coal, Ore, etc.)

hicago Perforating Co., Chicago, Ill.

irdle Perforating Co., Rochester, N. T.

lendrick Mfg. Co., Carbondale, Pa.

Audiow Saylor Wire Co., The St. Leuis,

Mo. Mo. McLanahan-Stone Machine Co., Hollidays-burg, Pa. Mundt & Sens. Charles, Jerey City, N. J. Nortmann-Purfite Co., Milwaukee, Wis. Stephens-Adams Mfg. Co., Birmingbam. Stephens-Adams Mfg. Co., Birmingham Ala. Universal Crusher Co., Cedar Rapids. Iowa.

SCREW-Machine Products.
Progressive Mfg. Co., Torrington, Conn.

SCREWS (Machine.) Progressive Mfg. Co., Torrington, Cann.

SEAWALLS.
Shore-Line Builders, Inc., Jacksonville,

SEPARATORS (Dust.)
Raymond Bros., impact Pulv. Co., Chicago.

SEPTIC TANKS.
Kaustine Co., Ins., Perry, N. Y.

SEWAGE Disposal Apparatus. Kaustine Co., Inc., Perry, N. T. Pacific Flush-Tank Co., New York, N. T.

SEWER Joint Compounds.
Pacific Flush-Tank Co., New York, N. Y.
Servicised Premoulded Products, Inc.,
Chicago, Ill.

Chicago, III.

—Pipe (Vitrified.)
Bannon Pipe Co., Louisville, Ky.
Cambria Clay Products Co., Blackferk, O.
Des Ce., Wm. E., Oak Hill, Ohio.
Lee Clay Products Co., Clearfield, Ky.
Owenshoro Sawar Pipe Ce., Owenshoro

SHADES (Offset.) Raugh Shade Corp., Chicago, Ill.

SHAFTING. Foote Bros., Gear & Mach. Co., Chicage. Ryerson & Sons, Inc., Jes. T., St. Lotts and New York. -(Cold Rolled.)

--- (Flexible.) Strand & Co., N. A., Chicago, Ill. -Material (Tubular.) ——(Splined.) Ohio Gear Co., Cleveland, Ohio.

SHARPENING Stones. Carborundum Co., Nisgara Falls, N. Y.

SHEET Metal Work.
National Blow Pipe & Mfg. Co., Ltd.,
New Orleans, Lt.
Skinner Bros. Mfg. Co., St. Louis, Mo. —Metal Working Machinery. Bliss Co., E. W., Brooklyn, N. Y. Whitney Metal Tool Co., Bockford, Ill. Toder Co., The, Cleveland, Ohio. Yoder Co., The, Cleveland, Ohio.

—Steel and Iron.
American Rolling Mill Co., Middletown, O. American Sheet and Tin Plate Co., Pittsburgh, Pa.
Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.
Republic Steel Corp., Youngstown, Ohio.
Ryerson & Son., Ine., Jos. T., St. Louis
and New York.
Tennessee Coal, Iron & Bailroad Co.,
Birmingham, Ala.
Youngstown Sheet & Tube Co., Yeungstown

SHEETS (Asbestes.)
Ambler Asbestes Shingle & Sheathing Co., Ambler Asbestos Shingle & She Ambler, Pa. Eternit, Inc., St. Louis, Mo.

--- (Steel-Asbestos Covered).
Robértson Co., H. H. Pittsburgh, Pa.

SHELVING (Unit.)
Lupton's Sons Co., David, Phila., Pa.

SHINGLES (Asbestos.)
Ambler Asbestos Shingle & Sheathing Co., Ambler Asbestos Shingle & She Ambler, Pa. Eternit, Inc., St. Louis, Mo.

---(Stain.) Cabot, Inc., Samuel, Boston, Mass.

SHOVELS (Hand.) American Mfg. Co., Chattanooga, Tenn

-(Steam, Gas and Electric — (Steam, Gas and Electric Power.)
Bucyrus-Erie Co., Erie, Penna.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp.. (Isveland, O. National Equipment Corp. (Kochring, Insley), Milwaukee, Wis.
Northwest Engineering Co., Chiese, Ill. Ohio Power Shovel Co., Lims, Ohio.
Thew Shovel Co., The, Lorain, Ohio.
Universal Power Shovel Co., Milwaukee, Wis.

SHUTTERS (Steel.)
Merchant & Evans Co., Philadelphia, Pa.
Peelle Co., The, Brooklyn, N. T.

-(Steel and Wood Bifolding.)

SILICATE OF SODA.

Grasselli Chemical Co., Inc., Birming-ham, Ala.

SITES (Agricultural.) West Palm Beach, City of, West Palm Beach, Fla.

—(Manufacturing.)
Alabams Power Co., Birmingham, Ala.
Arkanasa Natural Gas Corp., Bhrevepert,
Ld.
Atlanta and West Point R. B., Atlanta.
Brown & Co., Chattancoga, Tenn.
Central of Georgis Rwy., Savannah, Ga.
Central Power & Light Co., San Antenio.
Galveston, Texas.
Georgia Power Co., Atlanta, Ga.
Galveston, Texas.
Georgia Power Co., Atlanta, Ga.
Industrial Dallas, Inc., Dallas, Texas.
Jacksonville, City of Jacksonville, Florida,
Missouri-Kanasa-Turas Lines, Dallas,
Texas.
Missouri-Facific Lines, St. Louis, Me.
Model Land Company, (Flagler System),
St. Augustine, Fia.
Norfolk & Western Rallway, Roanoke, Va.
Oklahoma City, Okla.
Tennessee Central Rallway, Nashville,
Tennessee Central Rallway, Nashville,
Texas Power & Light Co., Dallas, Texas. -(Manufacturing.)
bama Power Ce., Birmingham, Ala.
ansas Natural Gas Corp., Shrevep

Tennessee Central Railway, Nashville, Tenn. Texas Power & Light Co., Dallas, Texas.

SKYLIGHTS. filwaukee Corrugating Co., Milwaukee, filwaukee Corrugating Co., Milwaukee, Wis. obertson Co., H. H., Pittsburgh, Pa.

SLABS (Concrete Floor.)

American Cament Tile Mfg. Co., Pittsburgh, Pa. ——(Concrete Roof.)

American Cement Tile Mfg. Co., Pittsburgh, Pa.

SLAG, For Concrete. Bloss-Sheffield Steel and Iron Co., Birmingham, Ala. Woodstock Blag Corp., Birmingham, Ala. —(Furnace.)
| | | (000 Sheffield Steel and Iron Co., Birmingham, Ala.
| (000 Stock Slag Corp., Birmingham, Ala.

SLINGS (Chain.) Woodhouse Chain Works, Trenton, N. J. —(Wire Rope.)
Roebling's Sens Co., John A., Trenton,

SLUICE GATES AND APPLI-ANCES. Smith Co., S. Morgan, York, Pa.

SNATCH BLOCKS (For Wire and Manila Rope.) Patterson Co., W. W., Pittsburgh.

SPADES. American Mfg. Co., Chattanooga, Tenn.

SPEED REDUCERS.
Earle Gear & Mach. Ce., Phila., Pa.
Foote Bros. Gear & Mich. Co., Chicago.
Morse Chain Co., Uthers, N. T.
Stephens-Adamson Mfg. Co., Birmingham. Ala.

SPIKES, (Railroad, Ship.)
Bethelehem Steel Co., Bethlehem, Pa.
Republic Steel Corp., Youngstown, Ohio.
Sweet's Steel Co., Williamsport, Pa.

SPRINGS (Machinery, Railway, Spiral Steel.) American Steel & Wire Co., Balte., Md Raymond Mfg. Co., Corry, Pa. —(Wire—All Kinds.) American Steel & Wire Co., Balte., Md.

SPRINKLERS (Automatic Fire.)

SPROCKETS.
Diamond Chain & Mig. Co., Indianapolis.
Foote Bros. Gear & Mch. Co., Chicago.
Morse Chain Co., Ithaca, N. Y.

STACKS (Iron and Steel.)
Biggs Boiler Works Co., Akron, Ohio.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge and Iron Works, Atlanta.
Downingtown Iron Wisk., Downingtown, Pa.
Hammond Iron Works, Warren, Ps.
Hedges Waish Weldner Co., Chattanooga, Tenn.
Ingalis Iron Works Co., Birmingham, Ala.
Lombard Iron Works & Supply Co., Augusta, Gs.
Pittaburgh-Des Moines Steel Co., Pittsburgh, Ps. burgh, Pa. bodeld's Sons Co., J. S., Macon, Ga. S. Pipe & Foundry Co., Burlingto N. J. Virginia Bridge & Iron Co., Roanoke, Va.

STAINS (Shingle, Woodwork.) Cabot. Inc., Samuel. Boston, Mass.

STAIR Steps (Safety.) Irving Iron Works Co., Long Is. City, N.Y. -Treads.
Central Iron & Steal Co., Harrisburg, Pa.

STAMPING (Sheet Metal.) American Pulley Co., Philadelphia, Pa — Steel (All Kinds.)
Commercial Shearing & Stamping Co.,
Youngstown, Ohio.

STANDPIPES.
Chattanoga Boller & Tank Ce., Chattanoga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Hammond Iron Works, Warren, Pa.
Pittsburgh-Des Moines Steel Ce., Pittsburgh, Pa.

STATIONERS (Envelopes, Letter and Billheads, etc.) Smith & Son Ca., Oscar T., Baltimore, Md. Young & Selden Co., Baltimore, Md.

STEAM SHOVELS.
Bucyrus-Erie Co., Erie, Pa.
Thew Shovel Co., The, Lorain, Ohio. —Specialties.
Jenkins Bros., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
Mueller Co., Decatur, Ill. Traps.

Jenkins Bros., New York, N. Y.

STEEL. STEELS.

Bethlehem Steel Co., Bethlehem, Pa.

Central Iron & Steel Co., Harrisburg, Pa.

Crucible Steel Co., of Amer., New York Crucible Steel Co., of Amer., New York City.
City.
District Brothers, Baltimore, Md.
Gulf States Steel Co., Birmingham, Ala.
Republic Steel Corn., Youngstown, Ohio.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
Virginia Bridge & Iron Co., Roanoke, Va. — (Alloy.) Crucible Steel Co. of Amer., New York City. Timken Roller Bearing Co.., Canton, Ohie.

Timen Rolled Bearing Co., Canon, Onle.

—(Cold Drawn.)

Bliss & Laughlin, Inc., Harvey, Ill.
—(Cold Rolled.)

American Steel & Wire Co., Balto., Md.

Bliss & Laughlin, Inc., Harvey, Ill.
—(Information Only.)

American Institute of Steel Construction,
Inc., New York City.

Inc., New York City.

—(Liners for Sewers, Tunnels and Caissons.)

Commercial Shearing & Stamping Co., Youngstown, O.

—(Special Analysis.)

Timken Bolier Bearing Co., Canton, Ohio.

—(Toole, High Speed.)

Bethlehem Steel Co., Bethlehem, Pa. Crucible Steel Co. of Amer., New York City.

Buildings (Designers and Buildings (Designers and Builders.)
American Bridge Co., New York, N. Y. Belmont Iron Works, Philadelphia, Pa. Braden Steel Corp., Tulss. Okia.
Butler Mfg. Co., Kansas City, Mo. Carolina Steel & Iron Co., Greensbore, N. C. Champion Bridge Co., Wilmington, O. Eichleay, Jr., Co., John. Pittsburgh. Ingalis fron Works Co., Birmingham, Ala. McClintic-Marshall Co., Pittsburgh. Pa. Phoenix Iron Co., The, Phila., Pa. Pittsburgh. Pa. Bichmond Strue. Steel Co., Richmond Strue. Steel Co., Roanoke, Va. — Forms (Curb., Gutter, Bidewalk, Road.).

Blaw-Knox Co., Pittsburgh, Pa.
——Plate Construction (Riveted or Welded.)
Biggs Boiler Works Co., Akron, Ohio. Birmingham, Alia.
Carolina Steel & Iron Co., Greensbore, N. C.
Central Iron & Steel Co., Harrisburg. Pa.

Carolina Steel & Iron Co., Greensoore, N. C.
N. C.
N. C.
Central Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boller & Tank Co., Chattanooga Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
Combustion Engr. Corp., New York City.
Hammond Iron Works, Warren, Pa.
Hedges Walsh Weidner Co., Chattanooga, Tenn.
Ingalls Iron Works Co., Birmingham, Ala.
Mecklenburg Iron Works, Charlotte, N. C.
Phoenix Iron Co., The, Phila., Pa.
Pittsburgh, Pa.
—Tank Hends.

—Tank Heads.
Commercial Shearing & Stamping Co.,
Youngstown, Ohio.

STOKERS (Mechanical.)
Babcock & Wilcox Co., The, New York.
Combustion Engr Corp., New York City.
Whiting Corp., Harvey, Ill.

STORAGE Batteries.
Electric Storage Battery Co., Philadelphia.
—Bins (Steel.)
Blaw-Knor Co., Plitsburgh, Pa.
Butler Bin Co., Waukesha, Wis.

STRIPS (Steel.)
American Steel & Wire Co., Baltimore.

STRUCTURAL STEEL (Hot Galvanized.)
Bessener Gaivanizing Works, Birmingham.
—and Iron.
American Bridge Co., New York, N. Y.
Beimont Iron Works, Philadelphis, Ps.
Carnogie Steel Co., Pittsburgh, Pa.
Carolina Steel & Iron Co., Greensbere.
N. C.
Champion Bridge Co., Wilmington, Ohle. Carolina Stesi & Iron Co., Greensbere, N. C. Carolina Stesi & Iron Co., Greensbere, N. C. Champion Bridge & Steel Co., Chattanooga, Tenn. Dietrich Brothers, Baltimore, Md. Eichleay, Jr. Co., John, Pittsburgh, Erie Steel Constr. Co., Erie, Pa. Ingalis Iron Works Co., Birmingham, Ala. McClintie-Marshall Co., Pittsburgh, Pa. Nashville Bridge Co., Nashville, Tenn. Phoenix Iron Co., The, Phila., Pa. Pidgeon-Thomas Iron Co., Memphis, Tenn. Pittsburgh-Des Moines Steel Co., Pittsburgh-Pa. Republic Steel Corp., Youngstown, Ohlo. Richmond Struc. Steel Co., Hielmond, Va. Roanoke, Va. Ryerson & Son, Inc., Jos. T., St. Leuis and New York.
Snead Architectural Iron Works, Leuisville, Ky. Southern Engineering Co., Charlotte, N. C. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Virginia Bridge & Iren Co., Roanoke, Va.

SULPHATE OF ALUMINA.

Grasselli Chemical Co., Inc., Birmingham

SULPHIDE OF SODA.
Grasselli Chemical Co., Inc., Birmingh

SULPHURIC ACID.
Davison Chemical Co., The, Balte., Md.
Du Pont de Nemours & Co., Inc., E. I.,
Wilmington, Del.

SUPER-HEATERS (Steam.)
Babcock & Wilcox Co., The, New York.

SURVEYING INSTRUMENTS.
Weber Co., Inc., F., Philadelphia, Pa.

SURVEYORS (Quantity.) Spring. Charles Herbert, Greensb

SWINGING ENGINES.
Dake Engine Co., Grand Haven, Mich. SWITCHBOARDS. SWITCHES.

ETC. Adam Elec. Co., Frank, St. Louis. General Electric Co., Schenectady. N. Y. Westinghouse Elec. & Mfg. Co., E. Pitts-burgh, Pa.

SYSTEMS (Business.) Ernst & Ernst, New York, N. T.

TACKLE BLOCKS (For Wire and Manila Rope.)
Patterson Co., W. W., Pittsburgh.

TANKS (Air Compressor.)
Air-Tight Steel Tank Co., Pittsburgh,

Pa.

Beaife & Sons, Wm. B., Oakmont, Pa.
Titusville Iron Works Co., Titusville, Pa. Caldwell Ce., Itiusville, Pa.

—(Elevated Steel.)
Caldwell Ce., Izc., W. E., Louisville, Ky.
Chicago Bridge & Iron Works, Atlanta, Gs.
Cole Mfg. Ce., R. D., Newman, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Schofield's Sons Ce., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.

Virginia Bridge & Iron Co., Roanoze, Va.
——(Elevated Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Weelford Wood Tank Mfg. Co.,
Paschall P. O., Philadelphia.

Paschail P. O., Philadelphia.

—(Iron and Steel.)

Air-Tight Steel Tank Ca., Pittsburgh, Pa.
American Bridge Co., New York, N. Y.

Biggs Boller Werks Co., Akron, Ohie.
Birmingham Tank Co., Birmingham.
Chattanoga, Boller & Tank Co., Chattanoga, Tenn.

Chicago Bridge & Iron Works, Atlanta,
Ga.

Cole Mfg. Ca., R. D., Newnan, Gs.

Dowaingtewn Iron Werks, Downingtown,
Pa.

Pa.

Hammond Iren Works, Warren, Pa.

Lombard Iren Works & Supply Co., Au-

Hammond Iron Works, Warren, Pa.
Lombard Iron Works & Supply Ca., Augusta, Ga.
McClintic-Marshall Ca., Pittsburgh, Pa.
Meschlenburg Iron Works, Charlotte, N. C.,
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
Sehofted's Sons, Wm. B., Oakmont, Pa.
Schofteld's Sons Co., J. S., Macon, Ga.
Titusville Iron Werks Co., Titusville, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.
Westinghouse Traction Brake Co., Wilmerding, Pa.

——(Seamless Steel.)

Jamey, Jz., Jes. A., Phila., Pa.

National Tube Co., Pittsburgh, Pa. National Tube Co., Pittaburgh, Pa.
——(Storage, Oil, etc.)
Biggs Boiler Works, Akron, Ohle.
Birmingham Boiler & Engr. Co., Birmingham, Aia.
Chicago Bridge & Iron Works, Atlanta,

ingtown Iren Works, Downingtown,

Ps.
Hammend Iron Works, Warren, Pa.
Ingalis Iron Works Ce., Birmingham, Ala.
Mecklenburg Iron Works, Charlotte, N. C.
Pittsburgh-Des Meines Steel Co., Pittsburgh, Pa.
Titusville Iron Works Co., Titusville, Pa.

Caldwell Ca., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Paistta, Fla.
Viginia Mehy. & Well Co., Richmond,
Vs.
Wood Tank Mfg. Ce., G.,
Paschal P. O., Philadelphia.

— (Wood Pickling.)
Woolford Weed Tank Mfg. Co., G.,
Paschall P. O., Philadelphia.

TAPE (Insulating.)
Okenite Co., New York, N. Y. ——(Measuring.) Lufkin Rule Co., Saginaw, Mich.

TAX SPECIALISTS.
Ernst & Ernst, New York, N. Y.
Le Baron, Ernest T., Jacksonville, Fis.

TELEPHONE SERVICE.

TERRA COTTA (Ornamental.) Atlanta Terra Cotta Co., Atlanta, Ga.

TEXTILE CHEMICALS. Grapelli Chemical Co., Inc., Birmingham

TILE (Cement Roofing.) American Cement Tile Mfg. Co., Pitts-—(Cork Composition.) Congeleum-Nairn, Inc., Kearny, N. J.

—(Cork Flooring.) Cengeleum-Nairn, Inc., Kearny, N. J. -(Hollow Building.) bria Clay Products Co., Blackfork,

Ohis.

(Roof.)
Hood Ca., B. Mintin, Dalsy, Tenn.

(Rubber.)
Congoleum-Nairn, Inc., Kearny, N. J.

(Sewer.)
Lee Clay Products Ca., Clearfield, Ky.

TIMBER Fittings.
Dupler Hanger Co., Cleveland, Ohio.
——(Creosoted.)
Amer. Crescote Wis., Inc., New Orleans.
Amer. Crescoting Co., Inc., Louisville, Ky.
Prettyman & Sons, J. F., Charleston, S. C.

TIME Recorders. Kaiser Klock Co., L. E., Baltimore, Md.

TIN AND TERNE PLATES.

American Sheet & Tin Plate Co., P.

burgh, Pa.

Bethlehem Steel Co., Bethlehem, Pa. Granite City Steel Co., Granite City, Ill. Youngstown Sheet & Tube Co., Youngs-town, Ohie.

TOBACCO MACHINERY.

TOILET TISSUE.

TOOLS (Measuring.) Lufkin Rule Co., Saginaw, Mich. — (Woodworking—Portable. Electric, Hand.) appat, Incorporated, Pittsburgh, Pa.

TORCHES (Blow.) Wall Mfg. Supply Co., P., Pittsburgh, Pa. (Kerosens.) St. Paul Welding & Mfg. Co., St. Paul, Minn.

TOWERS (Electric Transmission.) American Bridge Co., New York, N. Y. Bessemer Galvanizing Works, Birmingham. Nashville Bridge Co., Nashville, Tenn. -(Radio.) -(Steel and Wood.) ttanooga Boiler & Tank Co., Chatta-Chattanooga Boiler & Tank Co., Chattanooga, Tenn. Cole Mfg. Co., R. D., Newman, Ga.

TRACK (Portable or Permanent.) Sweet's Steel Co., Williamsport, Pa.

TRACTORS (Industrial.) AISAUTURES (INGUSTIBL.)
Atlas Car & Mfg. Co., The, Cieveland, O.
Caterpillar Tractor Co., San Leandro, Cal.
Clark Tructractor Co., Battle Creek, Mich.
Cleveland Tractor Co., Cleveland, Ohle.
International Harvester Co., of America,
Inc., Chicago, Ill.

——(Road.) Caterpillar Tractor Co., San Leandro, Cal. Cleveland Tractor Co., Cleveland, Ohio. —Attachments (Side Boom.) W-K-M Co., Inc., Houston, Texas.

TRAILERS. (Four Wheel.) — (Heavy Duty.)
Electric Wheel Co., Quincy, Ill. ——(Industrial.)
Easton Car & Construction Co., Easte
Pa.
Electric Wheel Co., Quiney, Ill. ---(Pole.)
Electric Wheel Co., Quincy, Ill.

TRAMWAYS (Acrial Wire Rope.) American Steel & Wire Co., Balte., Md. Broderick & Bascom Rope Co., St. Louis. Leschen & Sons Rope Co., A., St. Leuis.

TRANSFORMERS. General Electric Co., Schenectady, N. Y. Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa. —(Used.) Electric Service Co., Cincinnati, Ohio.

TRANSMISSION TOWERS (Galvanized.)
Bessemer Galvanizing Works, Birming-ham.
McClintic-Marshall Co., Pittsburgh, Pa.

TRENCH MACHINERY. See

TRESTLES (Wooden.)
Patent Scaffolding Co., Chicago, Ill.

TRI-SODIUM PHOSPHATE.
Grasselli Chemical Co., Inc., Birming

TROLLEY WHEELS (Self Oiling.) Meccasin Bushing Co., Chattanooga, Tenn.

TRUCK CRANES.
Universal Crane Co., Lorain, O.

TRUCKS (Dry Kiln.) Moore Dry Kiln Co., Jacksonville, Fis. — (Industrial.)
Atlas Car & Mfg. Co., The, Cleveland, O.
Clark Tructractor Co., Battle Creek, Mich.
Lansing Co., Lansing, Mich.
Nutting Truck Co., Chicago, Ill.
Service Caster & Truck Co., Albion, Mich.

-(Motor.)
ernational Harvester Co., of America,
inc., Chicago, Ill.
-(Platform, Freight, Mill, Factory, etc.) American Pulley Co., Philadelphia, Pa.

Clark Tructractor Co., Battle Creek, Mich. Electric Wheel Co., Quincy, Ill. Nutting Truck Co., Chicago, Ill. Service Caster & Truck Co., Albion, Mich. Truscon Steel Co., (Pressed Steel Division) Claveland, Ohio. ---(Steel Shop.)

TUBES (Boiler.) See Boiler

TUBING (Metal.)
Boiler Tube Co., of America, Pittsburgh.
——(Seamless Steel.)
National Tube Co., Pittsburgh, Pa.
Timken Boiling Bearing Co., Canton, O.

TURBINES (Hydraulic.)
Cook, Inc., A. D., Lawrenceburg, Ind.
Davis Foundry & Mach. Works, Rome, Ga.
Leffel & Co., The James, Springfield, U.
Smith Co., S. Morgan, York, Pa.

— (Steam.)
Allis-Chaimers Mfg. Co., Milwaukee, Wis.
Delaval Steam Turbine Co., Trenten,
N. J.
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittaburgh, Pa.

TURNBUCKLES.
Russell, Burdsell & Ward Bolt & Nut
Co., Port Chester, N. Y.

TURNTABLES.

American Bridge Co., New York, N. Y.

Easton Car & Construction Co., Easton,
Pa. Virginia Bridge & Iron Co., Roaneke, Va. --- (Portable for Motor Trucks.)
Blaw-Knox Co., Pittsburgh, Pa.

UNIONS. Dart Mfg. Co., B. M., Providence, R. I.

UNIT HEATERS. Grinnell Ce., Inc., Providence, R. I. Skinner Bros., Mfg. Co., St. Louis, Mo.

VALVES.
Columbian Iron Works, Chattanooga, Tena.
Jenkins Bros., New York, N. Y.
Ludilow Valve Mig. Co., The, Troy, N. T.
Lunkenkeimer Co., The, Cincinnati, Ohie.
Merco Nordstrom Valve Co., San Francisco, Cal.
Mueller Co., Decatur, Ill.
Vogt Brothers Mig. Co., Leuisville, Ky.
Vogt Machine Co., Henry, Louisville, Ky.
Westinghouse Traction Brake Co., Wilmerding, Pa.

(Acid Proof.)

-(Acid Proof.) kenheimer Co., The, Cincinnati, O. (Gate.)
Ludlow Valve Mfg. Co., The, Trey, N. Y.
Lunkenheimer Co., The, Cincinnati, Ohte.
Wood & Co., E. D., Philadelphis, Pa.

VENTILATING SYSTEMS Skinner Bros. Mfg. Co., St. Louis Swartwout Co., Cleveland, Ohio.

VENTILATORS (Roof.)
Merchant & Evans Co., Philadelphia, Pa.
Milwaukee Corrugating Co., Milwaukee
Wis.
Robertsen Co., H. H., Pittsburgh, Pa. -(Rotary.) rtwout Co., Cleveland, Ohio.

WALL HANGERS.
Duplex Hanger Co., Cleveland, Ohio.

WARDROBES (Hygienic, School.)
Wilson Corp., The J. G., New York.

WATCHMAN'S PORTABLE CLOCKS.
Davis-Paradis Watchman's Clock Cerp.,
New York, N. Y.
Kaiser Klock Co., L. E., Balto., Md.

WATERPROOFING (For Brick, Concrete, Granite.)

Asphalt Products Co., Syracuse, N. Y.
Foster Co., Benjamin, Philadelphia, Pa.
Servicised Premoulded Products, Inc.
Chicago. Ill.
Solvay Sales Corp., New York City.
Senneborn, Sons., Inc., L., New York.

WATER Purification.
Roberts Filter Mfg. Co., Darby (Phila.), Pa. Scalfe & Sons, Wm. B., Oakment, Pa. -Softening Apparatus (Purify-

ing.)
American Water Softener Co., Phila., Pa.
International Filter Co., Chicago, Ill. -Works Supplies and Appli-Amer. Cast Iron Pipe Co., Birmingham. Cast Iron Pipe Besearch Assn., Chicago

Columbian Iron Werks, Chattaneegs, Tenn. Cook, Inc., A. D., Lawrenceburg, Ind. Glamorgan Pips & Futy. Co., Lynchburg, Va. Leadite Co., The, Philadelphia, Pa. Mueller Co., Decatur, Ill. U. S. Pipe & Foundry Co., Burlington,

N. J. Wood & Co., R. D., Philadelphia, Pa.

WELDING APPARATUS (Electric Arc.)
General Electric Co., Schenectady, N. Y.
Westingboune Elec. & Mfg. Co., E. Pitts-burgh, Pa.

Apparatus (Oxy-Acetylene.)
St. Paul Welding & Mfg. Co., St. Paul,
Minn.

WELL CONTRACTORS (OII, Artesian, etc.)
Virginis Machy. & Well Co., Bichmes

WHEELBARROWS.
Lansing Co., Lansing, Mich.
Sterling Wheelbarrow Co., Milwaukee.

WHEELS AND AXLES.

WINCHES. Sasgen Derrick Ca., Chicage, Ill. Schultz & Sen, A. L., Chicago, Ill.

WINDOW Frames and Sash (Metal.)
Bayley Co., The William, Springfield, O.
Lupton's Sons Co., David, Phila., Pa.
Truscen Steel Co., Youngstown, O.

WINDOWS. (Steel Basement, Casement.)
Bayley Co., The William, Springfield, O.
Detroit Steel Products Co., Detroit, Mich.
Lupton's Sons Co., David, Phila., Pa.

— (Steel Garage.)
Detroit Steel Products Co., Detroit, Mich.
Lupton's Sons Co., David, Phila., Pa.
— (Steel Pivoted, Screened.)
Bayley Co., William, Springfield, O.

—(Ventilating.)
Bayley Co., The William, Springfield, O.
Detroit Steel Products Co., Detroit, Mich.
Lauton's Sons Co., David, Phila., Pa.

WIRE (All Kinds.)
American Steel & Wire Co., Chicago.
Roebling's Sons Co., John A., Trenten,
N. J. Ryerson & Son, Inc., Jos. T., St. Louis and New York.

——(Barbed Wire, etc.)
American Steel & Wire Co., Baite., Md.
Gulf States Steel Co., Birmingham, Als.
Youngstown Sheet & Tube Co., Youngstown, Ohlo.

——(Fence.)
Anchor Pest Fence Ce., Baltimere, Ma.
Gulf States Steel Go., Birmingham, Ala.
Page Fence Association, Chicago, Ill.

——(Flat and Round.)
American Steel & Wire Co., Balte, Mt.
——(Galvanized and Annealed.)
American Steel & Wire Co., Balte, Mt.
Gulf States Steel Co., Birmingham, Ala. Guil States Steel Co., Birmingham, Ala.
——(Telephone and Telegraph.)
American Steel & Wire Co., Balte, Md.
——(Welding.)
American Steel & Wire Co., Chicage, Ill.
Roseling's Sens Co., John A., Trenton,
N. J.

Cloth (Iron, Steel, Copper, Cloth (C.)
Harrington & King Perf. Ca., Chisage.
Ludlow Saylor Wire Co., The, St. Louis,

Goods.
Dufur, Baggott & Co., Baltimere, Md.
—Netting.
Ludlow Saylor Wire Co., The, St. Leuis,

Mo.

Rope (Transmission, Hoisting, Haulage.)

American Steel & Wire Co., Chicage, Ill.
Brodorick & Bascom Rope Co., St. Louis.
Leschen & Sons Rope Co., A., St. Louis.
Roebling's Sons Co., John A., Trenton,
N. J.

—Rope Clips.

American Steel & Wire Co., Baito., Md.
Broderick & Bascom Rope Co., St. Louis.

WOOD (Preserved.)
Delaware Wood Preserving Co., Phila.

WOODWORKING MACHINERY.
Wannat. Incorporated. Pittsburgh. Pa.

ZINC CHLORIDE.
Grașselli Chemical Co., Inc., Birmingham.
Ala.

ZINC META ARSENITE (Wood Preservative.) Curtin-Howe Corp., New York City. Culf States Cross. Ca., Hattiesburg, Miss.

Alphabetical Index of Advertisements

A—471	Blystone Mfg. Co	Delaware Word Preserving Co. 37 Delta Equipment Co. 116 Dempster Equip, Co. 118 Detroit Steel Products Co. 2 Diamond Chain & Mfg. Co. 3 Dixie Bauxite Co. 114 Dixie Culvert & Metal Co. 2 Dixie Culvert Mfrs. Asso. 4	Hanchett Bond Co. Harbison-Walker Refractories Co. 4 Hardsway Contracting Co. 50 Harnischfeger Corp. 13-23 Harrington & King Perforating Co. 13 Harrington & King Perforating Co. 48 Harsa Engineering Co. 48 Harsa Engineering Co. 119 Hedges Walsh Weidner Co. 1 Hedrick, Ira G. 48 Heineken Engineering Corp. 116 Heiss Hotel System. 38 Hendrick Mfg. Co. 46 Hercules Powder Co. 1 Herty, Chas. H. 48 Hill & Griffith Co. 4 Hills Co. 60 Googe B. 48 Hires Turner Glass Co. 4 H
Alpaugh & Sons, Chas. W. 49 Alpha Portland Cement Corp. 1 Aluminum Co. of America. 45 Ambler Asbestos Shingle & Sheathing Co. 45 American Appraisal Co. 45 American Bridge Co. 43 American Cast Iron Pipe Co. 43 American Cement Tile Mg. Co. 2 American Creosotte Works. 37 American Creosotte Works. 37 American Creosotte Works. 37 American Elevator & Machine Co. 34 American Gas Association. 34 American Institute of Steel Construction, Inc. 54 American Kron Scale Co. 54	Cabot, Inc., Samuel. Cahill Co., W. S	E. I	Hitners' Sons, Henry A. 3 Holt Hardwood Co. 37 Honhorst Co., Joe . 4 Hood Co., B. Mifflin. 34 Hoosier Engineering Co. 49 Hornbuckle Contracting Co. 49 Hough Shade Corp. 2 Howell Electric Motors Co. 17 Howerton Engineering Co. 48 Huber Mfg. Co. 127 Hudson Pipe & Supply Co. 127 Hudson Pipe & Supply Co. 49 Hunt Co., Robert W. 50 Hunt's Sons. M. J. 114
American Limestone Co	Cement-Gun Co. 36	Eppinger & Russell Co	Hutto Engineering Co
Angle-Blackford Co. 49 Angle Steel Stool Co. 38 Arkanses Natural Gas Corp. 1 Armco Culvert Mfrs. Asso. 3 Arundel Corporation. 126 Asphalt Products Company. 1 Atkins & Co. E. C. 36 Atlanta & West Point R. R. 3 Atlanta Terra Cotta Co. 35 Atlantic Bridge Co. 20 Atlantic Creosoting Co. 37 Atlantic, Gulf & Pacific Co. 1 Austin Machinery Corp. 1 Austin-Western Road Machy. Co. 1 Ayer & Lord Tie Co. 3	Chicago Bridge & Iron Works 39	Fay, Spofford & Thorndike. 49 Fernholts Machinery Co. 18 First & Merchants Nat'l Bank of Richmond friske-Carter Const. Co. 49 Flood & Co., Walter H. 50 Floyd & Lochridge. 50 Foote Bros. Gear & Machine Co. 1 Ford, Bacon & Davis. 50 Foster Co., Benjamin. 36 Frank, M. 117 Freeland, Roberts & Co. 48 Friend & Co. 126 Froehling & Robertson. 50 Fuller & McClintock. 48 Fuller Lehigh Co. 1	Inter-State Fdry. & Machine Works 18 Inviteta Engineering Co. 48 Inviteta Engineering Co. 28 Jacksonville, Fla. City of 2 Jacksonville, Fla. City of 2 Jacksonville, Fla. City of 4 Jacksonville, Fla. City of 4
Babcock & Wilcox Co	Between Pages 36 and 37 Columbian Iron Works	Galveston, Texas, City of	K Kaiser Klock Co., L. E
Best Malt Products Co	Locher Inc.	Gomes & Co., P. L. 49 Granite City Steel Co. 5 Grasselli Chemical Co. 53 Greenpoint Iron & Pipe Co. 116 Greigory Electric Ce. 115 Greiner & Co., J. E. 48 Grey Steel Products Co. 117 Gridley Constr. Co., Lee A. 49 Grinnell Co., Inc. 1 Gulf Refining Co. 38 Gulf States Creocoting Co. 37 Gulf States Creocoting Co. 5 Gunite Concrete & Constr. Co. 1 Gunite Construction Co. 1 H Haas Pattern Co., A. W. 18 Hammond Iron Co. 36 Hammond Iron Works 5	L Laneing Co

L Na	0	S	Timken Roller Bearing Co142
Ludlow Engineers	O'Brien Mchry. Co., The	St. Paul Welding & Míg. Co. † Salem Foundry & Machine Works 18 Sanderson & Porter. 49 Saagen Detrick Co. † Sauerman Bros., Inc. 120 Savannah Crecooting Co. 37 Saville, Inc., Allen J. 50	Titusville Iron Works Co. 2 Trackson Co. 127 Truscon Steel Co. 31 Truscon Steel Co. (Pressed Steel Division). 16 Tucker & Laxton. 50 Turner, C. A. P. 48
Dapon a cons con David	Ophuls & Hill 48 Owen Bucket Co., The 125 Owensboro Sewer Pipe Co. ‡	Scaife & Sons Co., Wm. B. 13 Schofield's Sons Co., J. S. 47	U
M MacElwee & Crandall, Inc	P Pacific Flush-Tank Co	Schults & Son A. L	Union Tank & Pipe Co
Manistee Iron Works Co	Page Fence Association.	Inc.	V
Maryland Trust Co. 1 McClintic-Marshall Co. 20 McCrady Co., John. 48 McCrary Co., John. 49 McEverlast, Inc. 1 McLanahan and Stone Mch. Co. 110 Mecklenburg Iron Works. 47	Pennington, J. R. 48 Penn Mchry, Co., H. O. 118 Pennsylvania Drilling Co 50 Perry, Buxton, Doane Co 117 Phoenix Iron Co., The 20 Piatt, Wm. M 48 Picard Laboratories, The 49 Pidgeon-Thomas Iron Co 20	Simplicity System Co	Veeder-Root Inc. † Victoria Paper Mills Co. † Viking Pump Co. 21 Virginia Bridge & Iron Co. 21 Virginia Mchry. & Well Co. 4 Vogt Bros. Mfg. Co. 5 Vogt Machine Co., Henry. 5
Mees & Mees	Pipe Railing Constr. Co	Smith Corp., A. J. Smith Elroy G. 48 Smith Co., S. Morgan . ‡ Smith & Son Co., Öscar T . 107 Smith & Co., W. M . 116 Snare Corp., Frederick . 50	w .
Merco Nordstrom Valve Co. 32	Pittsburgh Piping & Equip. Co.	Snaed Architectural Iron Works. 30 Solvay Sales Corp. Sonneborn Sons, Inc., L Southern Drilling Co. Southern Brilling Co. Southern Hotel, The	Wadleigh & Bailey
Nashville Hardwood Flooring Co Nashville Industrial Corp 115-116 National Blow Pipe & Mfg. Co., Ltd. 37 National Cast Iron Pipe Co 40 National Equipment Corp 26-27	Richmond Structural Steel Co. 20 Riddell Co., W. A	T Table of Contents	W-K-M Co., Inc
National Paving Brick Mfrs. Asso. National Traffic Guard Co. National Tube Co. Newport News Shipbuilding & Dry Dock Co. Norfolk & Western Railway.	Roberts Filter Mfg. Co. 13 Robertson Co., H. H	Taylor-Colquitt Co. 37 Taylor Forge & Pipe Works. † Taylor Co., Halsey W. * Taylor Sons Co., Chas. * Taylor, Wilson & Co., Inc. † Tennessee Central Railway. †	Yoder Co., The
Nortmann-Duffke Co. 46 Northwest Engineering Co. 11-117 Novo Engine Co	Roebling's Sons Co., John A	Tennessee Coal, Iron & Railroad Co. 22 Tennessee Metal Culvert Co. 5 Texas Power & Light Co. 5 Thew Shovel Co., The. 5 Thompson & Bros., T. C. 49	Youngstown Sheet & Tube Co 19 Z Zelnicker in St. Louis
Advis. marked ? net in this issue. Advis. marked ? appear in first issue of mor Advis. marked * appear every other week.	Classified) -	Proposal Advertisements Pages 111 to 113	Resale Department Pages 115 to 118 2-30)

Eleven Billion Dollars

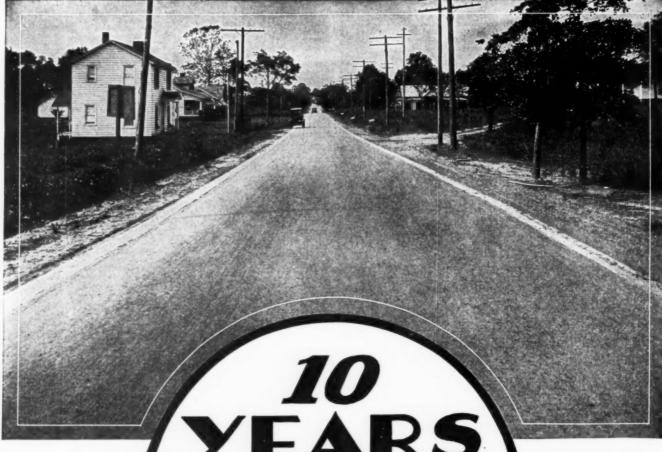
The country has announced a building and construction program that calls for the expenditure of an enormous amount of money. Get your share.

The program is getting under way and will continue to gain momentum from month to month. It is advisable to follow closely the reports in the Daily Construction Bulletin or all industrial, engineering and construction enterprises that are developing in the sixteen Southern States from Maryland to Texas.

Daily Construction Bulletin

Published every business day—300 issues a year Subscription price, \$40.00 a year

Published by MANUFACTURERS RECORD, Baltimore, Md.



Durham-Chapel Hill Road. Built by North Carolina State Highway Commission in 1920. Carries major traffic. No maintenance to date. YEARS
without a cent of cost
for
MAINTENANCE
to this
Kyrock

8 miles of perfect pavement through picturesque North Carolina scenery. 4 miles on 5-inch concrete, 4 miles on macadam. All surfaced with Kyrock.

Another veteran Kyrock surface, demonstrating that the real cost of a road is its original cost plus maintenance cost over a period of years. When this is taken into consideration it will be found that Kyrock is the cheapest material available today.

This Kyrock surface has been under traffic ten years, with no maintenance to date. It is apparently as good today as when laid. Kyrock is non-skid, non-reflecting and resilient. It is laid cold. Kyrock possesses many advantages which you should know about—

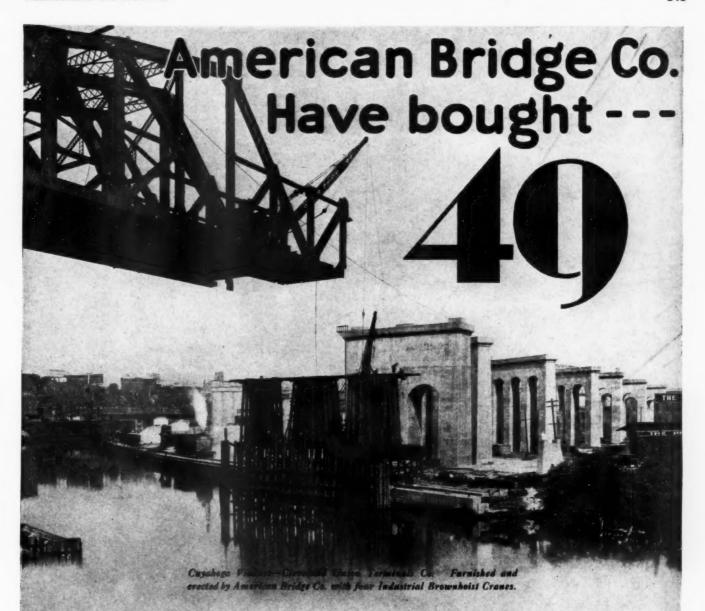
Write for particulars - - KENTUCKY ROCK ASPHALT CO., Incorporated, Louisville, Ky.

SURFACE

Myrock

Jhe Uniform

Pavement



World-famous for their ability to do the difficult as well as the ordinary erection job, it is a significant fact that the American Bridge Co. uses a large number of Industrial Brownhoist Cranes for handling their field work.

This company purchased their first Industrial Brownhoist in 1890 and the crane saw nearly forty years of active service. Since that time they have bought forty-eight additional machines for all kinds of work and ranging in capacities from five to one hundred and fifty tons.

Leaders of industry prefer Industrial Brownhoist locomotive and crawler cranes because of their dependability, fast operating speeds and long life. This preference has made it possible for us to build far more of these cranes than any other maker and to develop a type for every handling need.

The Industrial Brownhoist representative near you is a factory-trained man who devotes all of his time to handling problems. He will be glad to give you any available information which will help you reduce your handling costs.

Industrial Brownhoist Corporation, General Offices, Cleveland, Ohio
District Offices: New York, Philadelphia, Pittsburgh, Detroit, Chicago, New Orleans, San Francisco, Cleveland.
Plants: Brownhoist Division, Cleveland; Industrial Division, Bay City, Michigan; Elyria Foundry Division, Elyria, Ohio.

INDUSTRIAL BROWNHOIST

